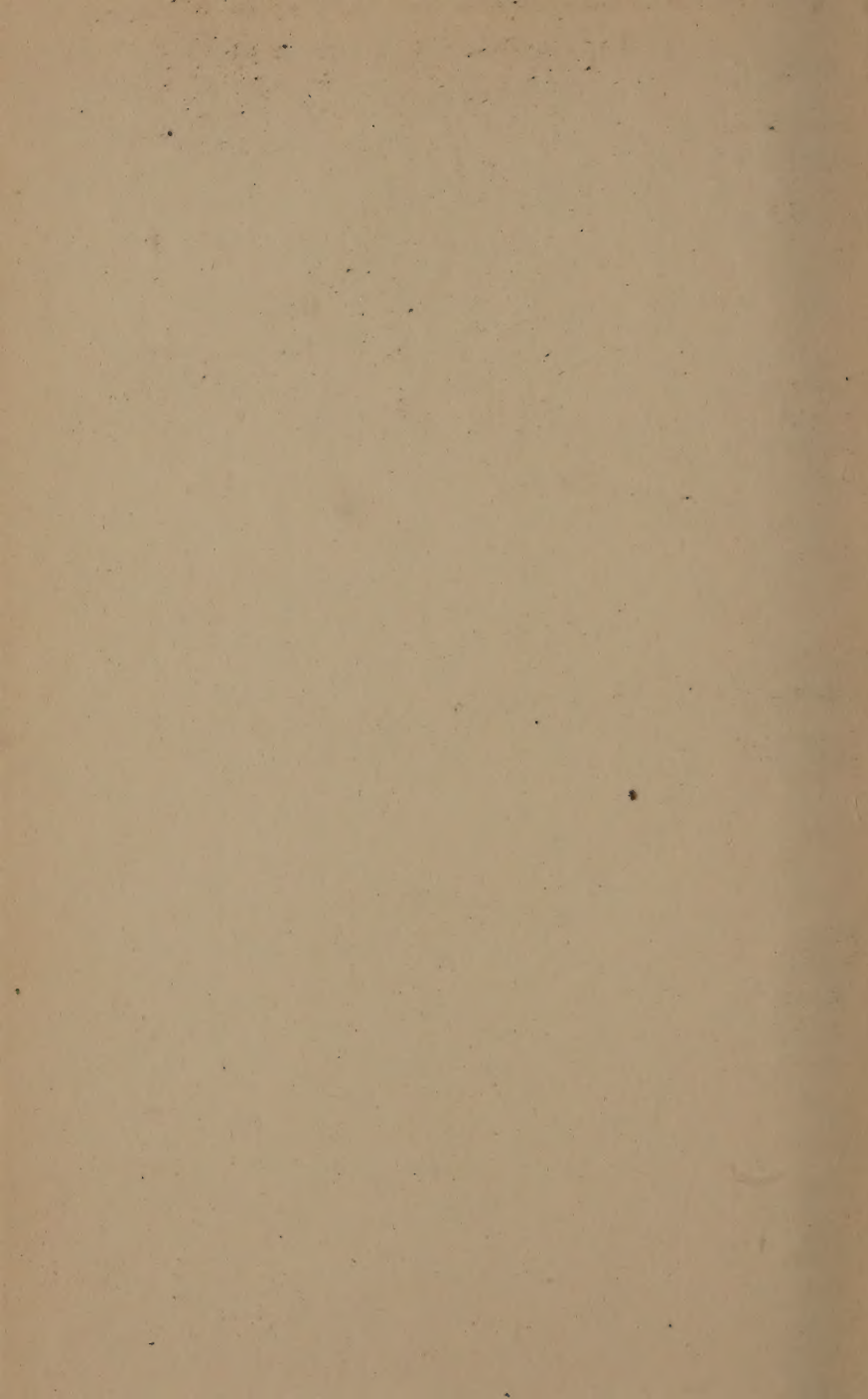




1756

1760

172

THE ABRIDGMENT
1913

J80
A3
1913
v.2

CONTAINING ANNUAL MESSAGE
OF THE PRESIDENT OF THE UNITED STATES
TO THE TWO HOUSES OF CONGRESS

63D CONGRESS, 2D SESSION

WITH REPORTS OF DEPARTMENTS
AND SELECTIONS FROM ACCOMPANYING
PAPERS

IN TWO VOLUMES

VOL. II

COMPILED AND EDITED UNDER THE DIRECTION OF THE
JOINT COMMITTEE ON PRINTING IN COMPLIANCE WITH
SECTION 73 OF THE ACT APPROVED JANUARY 12, 1895



WASHINGTON

1914



CONTENTS OF VOLUME II.

	Page.
Report of the Secretary of the Navy.....	875
Judge Advocate General.....	896
Bureau of Yards and Docks.....	908
Bureau of Navigation.....	919
Bureau of Ordnance.....	937
Bureau of Construction and Repair.....	951
Bureau of Steam Engineering.....	968
Bureau of Supplies and Accounts.....	975
Surgeon General.....	983
Marine Corps.....	1008
Report of the Secretary of the Interior.....	1021
Commissioner of the General Land Office.....	1128
Commissioner of Pensions.....	1158
Commissioner of Patents.....	1177
Commissioner of Education.....	1181
Director of the United States Geological Survey.....	1191
Director of the Bureau of Mines.....	1195
Commissioner of Indian Affairs.....	1213
Report of the Secretary of Agriculture.....	1249
Report of the Secretary of Commerce.....	1303
Report of the Secretary of Labor.....	1441
Report of the Interstate Commerce Commission.....	1503
Report of the Civil Service Commission.....	1545
Index to Volumes I and II.....	1563

REPORT

OF THE

SECRETARY OF THE NAVY.

NAVY DEPARTMENT,
Washington, D. C., December 1, 1913.

To the PRESIDENT.

SIR: I have the honor to submit herewith the annual report of this department for the fiscal year ended June 30, 1913, including operations to date.

There are now on the active list of the Navy 3,635 officers, of whom 342 are officers of the Marine Corps. The total enlisted strength is 51,500 men of the Navy and 9,921 marines. The story of the year's work by this patriotic body of efficient defenders of the Republic is replete with examples of courage, devotion, sacrifice, and progress. Happily the country has been free from war, but the Navy has no holiday. Alert, prepared, equipped for any emergency, the 65,000 men composing the personnel demonstrate that when called upon they are always ready for duty. Fit and under strict discipline, these men, drawn from the very flower of our country, need no tocsin of battle to call them into action. Always prepared, the country knows now as it has known in every crisis that what Mr. Lincoln called "the web-footed" arm of the service is busy in peace so that it may be in readiness for national defense.

The men who compose the Navy, and upon whom the country leans, are earnest to prevent war. Their advocacy of an "adequate Navy" is prompted by their faith that the surest guarantee of peace is a Navy strong enough to command world-wide respect.

Few know the splendid spirit of patriotism that animates them and the magnificent esprit de corps of the rank and file of the American Navy. It was never in such a high state of efficiency as to-day. Indeed the labors of the year have witnessed such unremitting attention to all that goes to keep a fleet in condition as to have improved the efficiency of every man in the service.

In considering the needs of the Navy the Secretary has given less thought to the guns than to the men behind the guns. The interests of the personnel have been constantly in mind. While none can ap-

preciate more profoundly than I that the supreme purpose for which the Navy exists is as the right arm of American defense, it is none the less true that its efficiency as a fighting force will be in the highest sense promoted by the adoption of a serious and systematic course of instruction aboard ship and at all shore stations, with a view to supplying ascertained deficiencies in academic education; perfecting the already existing technical instruction, and coordinating the entire educational work of the Navy. It is my ambition to make the Navy a great university, with college extensions afloat and ashore. Every ship should be a school, and every enlisted man, and petty and warrant officer should be given the opportunity to improve his mind, better his position and fit himself for promotion. In this way habits of study and application will be formed by the men, which will make them more alert, more efficient, more ambitious, and conduce to a general uplifting, which will be reflected in better discipline and in an improved morale throughout the ships. It will keep the minds of the men occupied, give them a more definite aim, and make for contentment and happiness. Training produces skill, and skill not only produces efficiency but enhances self-respect. It is admitted by naval officers that at present not only ordinary seamen but seamen and even petty officers have too little accurate knowledge. Their knowledge is approximate. They know a thing is habitually done but not always why it is done. This will be corrected by the systematizing of courses of instruction proposed. The school work will be of special advantage in case of reenlistments, and I confidently expect it to result in increasing the number of reenlistments, because education always whets the edge of ambition and fosters the impulses of patriotism; but even if the sailor returns to civil life after his first term, he will be better fitted for the duties of citizenship, and the trade he has acquired in the Navy will enhance his value as a breadwinner. The Navy will return him to his country better in mind and in manhood than when it first received him.

Such a school for academic, vocational, and technical instruction has already been introduced on board the *Des Moines*, and the results are promising. The plan of education contemplates the installation of these schools generally upon the ships and at the shore stations of the Navy by the 1st of January, 1914. The majority of the instructors on shipboard and at the training schools will be young officers fresh from the Naval Academy, although all officers will be interested and will assist. Midshipmen of the graduating class will have impressed upon them the fact that next to their man-of-war duties their most important work from the time they leave Annapolis will be in connection with the instruction of recruits in academic and technical subjects. Short experience has demonstrated that these

young officers make admirable instructors. They not only open the door to learning to the recruits, but the experience broadens their own view and increases their own knowledge.

The nuclei of this naval educational policy are the four training schools for recruits—at Newport, Norfolk, Chicago, and San Francisco—which form the base of our educational pyramid, and the 11 already existing technical schools maintained by the Government, institutions unexcelled for the character of their work by any kindred institutions in the country. These schools are:

The machinists' school at Charleston, S. C.

The electricians' schools at New York and Mare Island.

The torpedo school at Newport.

The seaman gunners' school at Washington.

The artificers' school at Norfolk.

The musicians' schools at Norfolk and San Francisco.

The school for cooks and bakers at Newport.

The yeomen's schools at Newport and San Francisco.

These schools are converting raw recruits into skilled men in the various trades required by the naval service.

It is not possible in a report such as this to elaborate these plans. Suffice it to say that the system of instruction is to be uniform on all the ships, so that men transferred from one vessel to another will not be the losers by the change. An officer on board each ship will be assigned to supervise and assist the work of all enlisted men who, by reason of their initiative and ambition, may have taken up correspondence courses with outside institutions. Classes for warrant officers, chief petty officers, and others, and special classes for enlisted men in the commissary branch, pay department, hospital corps, and other divisions on board ship who seek promotion will be formed.

With the demand for the midshipmen just leaving Annapolis to teach in the training schools and aboard ship the curriculum at the Naval Academy will include a short normal course, so as to better prepare young officers in the future to do this important work. It will be the function of heads of certain departments at the Naval Academy to assist the Navy Department in this work of systematic education by preparing and revising text books and in other ways. Thus Annapolis may be in a sense the educational center for the whole Navy, carrying out such general work as the Secretary of the Navy may prescribe. The Annapolis course leads up to post-graduate courses at the Academy itself and in certain universities and technical schools of the United States in the subjects of engineering, construction, and other scientific branches; but the apex of the Navy system of education is the War College at Newport, where the history of naval warfare and practical problems in strategy, tactics, and other

subjects incite to the highest degree initiative and resource. It is my intention to facilitate the detail of officers to duty at the War College at various times during their career in the different grades in the Navy, and an order has been issued that the completeness of their instruction in this vitally important branch be noted on their reports of fitness to be considered by the boards which examine them for promotion. From a personal inspection of the War College and its methods I am convinced that this institution deserves the most enthusiastic support and encouragement. Plans are making to enable all officers on ships to take the course by mail, and its advantages are to be widened by the principles upon which university extension has become a vital part of the colleges and universities.

It is a source of genuine gratification to have already been assured of the hearty support of the officers of the Navy who have cooperated with me in the formulation of this educational system. It is an earnest of the interest and zeal to be expected from the entire staff and line in completing and perfecting the work, and whose lively interest in the welfare of the enlisted personnel has been time and again manifested as rank and file have fought shoulder to shoulder and risked their lives for each other as well as for their country's flag.

Though no war cloud has burst upon us during the year, there has been sufficient active service to keep the Navy keyed up to the best preparedness. The fleet and the ships not attached to the fleet have given a good account of themselves in the varied practices, from the small-arm practice of the gunboats to the dynamic grandeur of the dreadnaught target practice at Hampton Roads in April and October. The element of competition between ships and between individuals and the keen interest taken in all contests have greatly improved target practice. The officers and men alike love the competition of these contests. The letter from the commander in chief, sending warm commendation to the fleet and commendation to the winners of trophies, gave new stimulus to the determination to excel. Constant devotion to duty and constant practice are the rule in the Navy. They keep men in the best trim for the service that may be required of them. The deplorable conditions that have harassed our nearest neighbor to the south have imposed an onerous duty on marines and sailors. They have gladly and willingly endured the sacrifices caused by the necessity of their presence in Mexican and other southern waters, where American ships were sent to protect Americans and help toward peace. In this difficult service men and officers have borne themselves with such patriotic discretion and judgment as to add to the debt their country owes them and to give new honors to the American Navy. It is as important for officers and men to be wise and discreet in

delicate situations as to be brave and reliant in battle. Naval officers perform the most delicate duties of diplomacy. In the past year their diplomatic success has come to be realized by the people of the country and has commanded their approval.

INTERNATIONAL CONFERENCE TO DISCUSS REDUCTION OF COST OF NAVY
AND ARMY.

The growing cost of dreadnaughts, of powder, and of everything that makes an efficient Navy gives reason for pause. This heavy expense commands national and international consideration. The naval appropriation has doubled in 13 years and yet this country has not joined the expensive competition and race for over-large navies to the same extent as have some other great nations. Ten years ago our largest battleship cost \$5,382,000. The next dreadnaught will cost \$14,044,000. When is this accelerating expenditure to be reduced? Naval programs, announced by the nations already having the largest navies, and the entrance into the building of dreadnaughts by nations which have not hitherto burdened their people with the expense of large battleships, indicate that the end is not yet. No single nation, with large interests, can safely take a vacation in the building of battleships. That much to be desired vacation must come through concerted action. If it is not hastened by appeals for the peaceful settlement of national differences the day is not far distant when the growing burden of taxation for excessive war and naval expenditures will call a halt. The suggestion of a vacation for one year in battleship building has met with hearty approval and I venture the earnest hope that this will bear fruit in a well-considered plan by navy-building nations not to let the unnecessary competition go to further lengths. It is manifestly not possible for the proposed cessation in battleship construction to be declared at once. It is not a vacation we need, but a permanent policy to guard against extravagant and needless expansions. Any vacation proposed would, of course, take into account the conditions in Government navy yards and in private establishments where battleships are built under contract. The whole force is at present concentrated in building ships for which material has been purchased. Time should be given for shipbuilders to obtain commercial orders so as not to ask them to incur loss. I venture to recommend that the war and navy officials and other representatives of all the nations be invited to hold a conference to discuss whether they can not agree upon a plan for lessening the cost of preparation for war. It is recognized that the desired end of competitive building, carried on under whip and spur, could not be effective without agreement between great nations. It ought not to be difficult to secure an agreement by which navies will be adequate

without being overgrown and without imposing overheavy taxation upon the industry of a nation. I trust the tentative suggestion for a naval holiday by the strongest of the powers will be debated and the matter seriously considered by an international conference looking to reduction of the ambitious and costly plans for navy increase. I trust that this country will take the initiative and that steps will be taken by a conference of all the powers to discuss reduction of the heavy cost of the Army and Navy.

BUILDING PROGRAM.

The wise naval policy for the United States at this time is to find the golden mean. It can not wisely by itself reduce the construction of dreadnaughts or compete with other great powers in burdening taxpayers to hasten the construction of a navy larger than our conditions demand. The estimates of the Navy Department show a decrease in the ordinary expenditures. The program of the department may be summed up in the phrase: "More money afloat and less ashore." I therefore recommend the authorization by the present Congress of the following building program:

Two dreadnaughts.

Eight destroyers.

Three submarines.

This is not, it will be observed, a large program, but it is a progressive one. It meets the demand to go forward in the continuation of "an adequate and well-proportioned navy." We have now under construction six battleships of the largest and most approved type. The *Texas* is now practically completed, but will not join the fleet until the new year. The *New York* will be commissioned next spring, and within two years we will, besides the *Texas* and *New York*, add to our fleet the powerful *Pennsylvania*, *Oklahoma*, *Nevada*, and *No. 39*. With the authorization of two of the largest battleships ever constructed, before the close of the present administration, the United States will have enough ships to have always a creditable and capable fleet in both the Pacific and the Atlantic Oceans. These, together with the smaller ships under construction, will make the American Navy one of strength and power, ready for the protection of American shores and American interests. A steady building program of advancement from year to year will be necessary to give us an "adequate navy," the goal of American needs and desires. Of the smaller craft, we now have under construction the following: 17 destroyers, 1 destroyer tender, 21 submarines, 2 submarine tenders, 2 fuel ships, 3 gunboats, 1 transport, and 1 supply ship.

If the present Congress authorizes the 2 dreadnaughts, 8 destroyers, and 3 submarines recommended the country will have a "well-proportioned" Navy, and future additions can be made year by year, to add to the effectiveness of the fleet or fleets. Those who bid us stand still in construction will not approve this conservative program. Those who wish to hasten more rapidly in construction will not give it their approval. It has been recommended, after mature consideration, as a middle course of wisdom. "It is a condition and not a theory that confronts us." The revenues of the country do not permit as large an expansion in naval building as the department might desire to enter upon at this time. In its recommendations it has kept in view the probable revenues and other demands and placed the new construction at the very lowest program that could meet the needs of the country or carry out the pledges made to the voters.

It is not believed it is dealing honestly with Congress to make large estimates in the expectation that the national legislators will use the pruning knife. I have reduced the building proposed by the General Board (see report in appendix) not because of opposition to the progressive plans of that able body of naval statesmen, but because it is deemed wise to suggest a budget that will be within the resources of our Government. It is the duty of the naval experts to make such recommendations as their experience and training dictate. It is the duty of the head of the department to urge only such appropriations as it is believed Congress can grant within the limits of the country's probable income. That has been the controlling motive in all the recommendations which are contained in the estimates for the Navy Department.

ARMOR, GUNS, AND POWDER SHOULD BE MADE BY THE DEPARTMENT.

The time has come when the department should be freed from excessive prices charged by private manufacturers of armor plate, guns and gun forgings, powder, torpedoes, and other supplies and munitions. Most of those necessities for the Navy are made by a very few manufacturers, and the prices charged are so much too high that I earnestly recommend that appropriations be made for an armor-plate factory and an increase in the gun factory, the powder factory, and the torpedo works. The ability to make part of the powder used has effected some reduction, but the department is forced to buy too large a quantity from the powder trust at an exorbitant price. It has been demonstrated that the department can save money by making its powder, guns, and torpedoes. It is not open to doubt that it can save larger sums when it can make its own armor plate and gun forgings.

IMPORTANCE OF ARMOR-PLATE FACTORY.

I desire to recommend the passage at the earliest moment of a sufficient appropriation to begin the construction of a Government armor plant to relieve a situation which, in my estimation, is intolerable and at total variance with the principle of economy in spending Government money. It is not my intention to enlarge here upon the economic reasons that prompt me to make this recommendation as I have already gone into them at length in a letter to the Senate in response to a request for information. It is sufficient to mention here that only three firms in this country can manufacture armor plate, and that these firms have put in bids for armor plate seldom varying over a few dollars, and in many instances being identical to a cent. Asked for reasons as to the uniformity of these bids, two of the firms replied frankly that as the contract would be divided amongst them anyway, the only effect of competitive bids would be to reduce the profits made by all of the three firms.

The department has made every effort to secure real competition and reasonable prices, even to the extent of withholding awards until the necessity of building battleship *No. 39* made it imperative that action be taken. After long negotiations the best efforts of the department resulted in securing a saving of \$111,875, by new "competitive" bids, a purely nominal competition, inasmuch as the successful bidder proposes to divide up the work with his rivals. This saving, while well worth the time it took to secure it, is after all very small as compared with the total cost of the armor. Prices charged by these firms for armor have been investigated by Congress a number of times and by special boards of experts, and in every case the investigators have reported that the prices charged are greatly in excess of the cost of manufacture. With the desire to be just, the Secretary offered to transmit to Congress any figures these companies cared to submit to show that their prices were reasonable, but they have refused to present the absolutely necessary data to the Secretary unless he would agree to accept it as confidential, which, of course, means that he would not allow Congress to analyze the figures. Confidential information about public expenditures was not desired and was not accepted. It is evident that without an armor plant of its own the Government in time of war or impending war would be entirely at the mercy of these three manufacturers and obliged to pay practically whatever price they asked. History does not warrant an assumption that the patriotism of these companies would prove superior to their desire for profits, inasmuch as during the time that war with Spain was imminent, these companies refused to accept the price fixed by Congress after investigation as a just rate and

declined to manufacture any armor until they got their own price of \$100 a ton more than that which Congress had determined on. In this connection it is well to note that the love of country possessed by these companies did not prevent them from furnishing armor to Russia, as reported to Congress, in 1894 at \$249 a ton, while they were charging the United States \$616.14 a ton upon purchases under the contract of March, 1893, nor did it hinder them from furnishing armor to Italy in 1911 at \$395.03 a ton, while they were charging their own Government \$420 a ton, and that even at the present day, according to information that seems reliable, they are furnishing the armor for the *Haruna*, now being built by the Kawasaki Co. at Kobe for Japan, at \$406.35 a ton as against the price, ranging from \$504 to \$440 a ton, which they are now charging us for the armor of battleship *No. 39*.

I am convinced from the reports made to me by experts who have gone carefully over the subject that we can make armor much cheaper than we now buy it, and that, from an economic point of view alone, the erection of a Government plant is amply justified. By manufacturing armor plate in its own plant the Government will be able to keep for its own use any improvements in the manufacture or composition of its armor that may be developed. The last word has not been said in armor, and past history shows that great improvements in the manufacture and design of armor plate have been made. The greater part of these improvements were suggested by actual experience gained by naval officers. Under our present system of obtaining our armor plate from private companies such improvements become the property of all the world, and can be obtained by anybody who cares to buy them. Even now the improvements in armor and the designs worked out by the Navy have been embodied in the warship of another nation recently finished by the Bethlehem Steel Co. and put into commission. This is not an argument lightly to be disregarded in favor of a Government armor plant, nor has it been overlooked, for instance, by Japan, which has erected its own armor-making plant and surrounded it with such secrecy that none of the other nations are able to tell whether or not at this minute the Japanese armor may not be superior to any other in existence. In addition to Japan, the French Government, after experimenting with a factory capable of producing only the lighter weights of armor, is enlarging its Government plant so as to permit of the production of thick plates, and Russia has had its own armor-plate factory for some time. In England the extortions of what is described in the English papers as the "armor ring," for there is every reason to believe that the agreement to maintain high prices among manufacturers is international, has resulted in agitation for a Government plant for that country which will probably be brought about in the next few years.

As mentioned in my letter to the Senate, taking the highest estimate which has been submitted to me by the experts of the Bureau of Ordnance as the probable total cost price of Government-made armor, the Government can achieve a saving by the erection of a 10,000-ton-a-year plant of \$1,061,360 per annum after deducting 4 per cent as interest on the money used in erection and installation of plant, and \$3,048,462 a year on the basis of a Government plant capable of producing 20,000 tons a year. If these figures are correct, as I believe them to be, and as Congress can easily ascertain for itself, I do not see how it is possible for Congress to justify to the people a refusal to erect a Government plant, nor how it can answer the charge that will invariably be brought up—that the same mysterious Providence which saved this profitable business to the steel companies three times in the past, even after money for a Government plant had actually been appropriated, is not still at work exercising its beneficent protection over these lusty specimens of infant industries, who are even now under Government investigation as violators of the antitrust law.

SUPPLY OF FUEL OIL.

I desire to recommend to Congress the immediate consideration of providing fuel oil for the Navy at reasonable rates, and the passage of legislation that will enable the department to refine its own oil from its own oil wells and thus relieve itself of the necessity of purchasing what seems fair to become the principal fuel of the Navy in the future, at exorbitant and ever-increasing prices, from the private companies that now completely control the supply. This matter has been given very thorough consideration by the department, and, while I am not prepared at this time to recommend the exact shape this legislation should take, it is my earnest wish that the subject receive immediate and serious consideration, as it is a matter, in my judgment, of paramount importance. I will be pleased to communicate further with Congress on this subject at any time it may desire. It is sufficient to point out at this time that the superiority of oil over coal for naval purposes has been already demonstrated and is no longer a matter of experiment; that Great Britain is equipping her navy with oil-burning vessels of the first class; that the English Government is already spending a total of \$1,871,750 in the erection of enormous oil tanks; that, in addition, the scantily yielding oil shales of Scotland are to be preserved for the use of the navy, and that in Mexico and elsewhere English firms are reaching out for oil fields from which to supply the demands of the English Navy. On the other hand, the price of oil is steadily creeping upward, so that to-day the United States Navy is paying over twice as much for its oil as it did in 1911. The only relief possible from

what will be a staggering item in the expense account of the Navy in the future is in the control of oil wells, and the refining of its own oil by the Navy Department. This has been clearly foreseen by the English Government, and the Hon. Winston Churchill, first lord of the admiralty, recently declared in the House of Commons that it is necessary for the Royal Navy to establish refineries and handle its own oil transportation in order to secure the kind of oil it wants and reduce the burden of expense. If England, geographically handicapped, and with no large sources of supply within her own borders, has concluded that this is the wise and economic policy, how can the United States, with bounteous flowing oil wells on Government lands already existing, and with fields near to both the east and west coasts to escape the charge of willful waste of public money if it continues to purchase oil at prices which may fatten the pockets of a few oil companies, but which increases the burden of the taxpayer? With only a portion of our fleet equipped to burn oil, the Navy uses this year 30,000,000 gallons. There is every likelihood that this amount will be increased to 125,000,000 in the future. Every gallon of this must be purchased from the oil companies at their own prices until Congress relieves the department by proper legislation.

The United States Navy has the enormous advantage enjoyed by no other nation, in that great oil fields exist in our own country close to the Atlantic Ocean, Gulf of Mexico, and Pacific Ocean, so that the supply of oil is assured. It is natural, for this reason, that the United States should take the lead in adopting the exclusive use of oil fuel and thereby reap the benefits of its many advantages in ship construction and in reliability of operation, a lead no other great naval power can follow with security. The great demand for petroleum and its products, however, has resulted in practically doubling the price of fuel oil in the last two years, and everything seems to indicate a further increase rather than a decrease in price. The large cost of fuel bills has thus become of much concern to the department and to the country.

It is advisable from every point of view that the Navy should become a producer and refiner of oil for its own use. By the time the Panama Canal is opened and the fleet begins frequenting the Pacific the Navy should be producing its own oil from the Navy petroleum reserves in the Elk Hills and Buena Vista fields of California, and its refinery should be in operation. Prompt steps should also be taken to lease oil lands in the Mid-Continent fields and to erect a refinery for the supply of oil-burning vessels on the Atlantic coast. This proposed step is no new departure, for the Navy now builds some of its own ships, maintains large industrial navy yards, a gun and a

clothing factory—all of which are indispensable to the supply of superior articles for the Navy and for the control of prices from commercial concerns furnishing similar articles.

A well-digested plan for the establishment of oil-fuel tanks at various ports and strategical points has been adopted, and the tanks will be erected well ahead of the time their usefulness may be expected to begin.

COAL.

The supply of superior coal from Norfolk to vessels in the Pacific and to our distant possessions in Honolulu, Guam, and Cavite has always been a source of great expense and of considerable uneasiness to the department. Relief from this situation has been expected from the coal fields of Alaska, but this has been greatly retarded by the lack of transportation facilities in that country. The department has finished the work of mining a shipload of coal from the Bering River fields of Alaska, and the armored cruiser *Maryland* is now testing it under service conditions. An expedition is also mining a similar sample in the Matanuska fields of Alaska. The department will soon be in a position to state whether Alaskan coal is or is not suitable for naval use. If it is found suitable for naval use it is hoped that the Congress will see fit to make it available immediately, for if the supply of oil meets the demands, as there is reason to think it will, our vessels have but few years more in which coal is to furnish the driving power, and economy and national security would seem to indicate this step to be both advisable and economical. From a strategical point of view it is imperative.

PEARL HARBOR DRY DOCK.

The naval disaster of the year occurred on February 17, 1913, when the huge cofferdam structure of the new graving dock at Pearl Harbor was wrecked by the underground pressure. The disaster not only caused heavy loss to the contractors, but is holding up further work on the dock, and its effect is far-reaching in consequence.

This is a matter of such serious importance that I deem it wise to ask Congress for advice as to what shall further be done in this matter. To assist in a decision as to the responsibility for the accident and the remedy, I shall forward to Congress the report of Mr. Alfred Noble, a civil engineer of international reputation. The department sent Mr. Noble to Pearl Harbor and his report is receiving careful consideration, preparatory to determining what course the department will recommend.

THE RADIO SERVICE.

The new radio service has become an important part of the Navy. Twenty-three radio stations have been established and opened to public business. The high-power radio station at Arlington is in successful operation, and is now used for communicating with other naval radio stations, and also as a time-signal station, connections having been made with the naval observatory whereby time signals are sent broadcast twice every day. This service is of great commercial value, and is highly appreciated not only by shipping interests, but by jewelers throughout the country, many of whom have installed the equipment necessary for receiving the time signals. The Arlington station is now being used in conjunction with the Eiffel Tower Station in Paris, in determining the difference of longitude between it and our Naval Observatory by means of radio signals. For this purpose a joint commission of American and French naval officers are in Paris and in Washington, taking nightly observations at these two observatories. In connection with this work it is expected to be able to determine the velocity of propagation of the Hertzian wave. This is a work of great scientific importance and it is expected to lead to very practical results in determining the longitudes of hydrographic survey bases, observatories, etc. It will enable the department to determine the longitude of points on the routes to the Panama Canal in both oceans with great accuracy, with the Naval Observatory as the base, and possibly, by cooperating with other Governments, to encircle the globe in the important work of verifying the longitude of many places, supplementing and extending the work done by officers of the Navy in the past when the submarine cable was used to connect remote points on the earth's surface.

THE USE OF AIR CRAFT IN WAR.

The value of air craft in warfare has been so highly regarded in most European countries that the war and naval budgets embrace many million dollars for experiment work, construction, and operation of every type of airship. In this country, while American aviators were the first to demonstrate the success of aviation, the fruits of the discovery have not been as fully utilized by us as they have been abroad, but it is hoped Congress will continue to show its confidence in airships as engines of war. The best scientific and military judgment of the world is that no nation can be said to be fully prepared for war that neglects this new military weapon of offense and defense. The Navy Department has avoided anything sensational in connection with its flights at Annapolis and Guantanamo, where instruction has been given in aeronautics. At Guan-

tanamo the Navy Aviation Corps acted in conjunction with the Atlantic Fleet, and many important and useful problems were carried on, with the result that a wide range and estimate of the future usefulness of the aeroplane in naval warfare was secured. During the present year the department has detailed an officer to visit Europe to obtain information regarding the latest laboratory methods and developments, and some weeks ago I appointed an aeronautic board, with directions to consider what recommendations should be made to enlarge the number of aeroplanes and other air craft in the Navy and to increase their efficiency. Their report will be available to Congress later.

It is gratifying to know that recently cooperation between the Aviation Corps of the Navy and private owners of aeroplanes has been secured, and an aeroplane reserve has been voluntarily placed at the disposal of the Government for use in time of war.

NAVAL MILITIA AND NAVAL RESERVE.

The organized Naval Militia has increased both in numbers and efficiency during the past fiscal year. Practical experience has been gained by cruising in vessels loaned by the Navy, and although many of them are old and some must be withdrawn each year on account of the large expenditures required to repair them, the department hopes to construct vessels of a type most suited to Naval Militia conditions with which to replace the old vessels, which it becomes necessary from time to time to replace. The formation of the Naval Militia on lines similar to those under which the land militia is organized is necessary. The department appreciates the usefulness of this volunteer aid to the regular Navy and hopes that Congress will take steps to increase its usefulness. Likewise every encouragement should be given to the Naval Reserve, made up of those whose experience makes them a force immediately available when needed.

THE NAVY ASHORE.

The Navy is primarily a thing on the seas. Every dollar expended ashore is wasted unless it promotes the efficiency of the fleet. Shore stations of all sorts tend to growth and large cost. Too much money has been poured out upon hospitals, coaling stations, and buildings on the land. Too little has gone for the erection of docks and equipment for the construction of warships. Only one navy yard is equipped for the construction of dreadnaughts. Our navy yards should be equipped with docks to receive dreadnaughts and to construct battleships. Recommendations have been made for some expansion in these needed directions, but most of them may be postponed until we have provided an "adequate and

well-proportioned Navy." In any matters of doubt as to whether an estimate should be made for money to be expended ashore or afloat, I have resolved the doubt in favor of increasing the strength of the Navy afloat.

ECONOMIES IN EXPENDITURES.

It has been found practicable to effect certain economies in expenditures resulting in an immediate saving of not less than \$2,200,000. Of this sum more than \$600,000 was saved on dreadnaught *No. 39*. This has been brought about largely by the close scrutiny to which all projects are subjected and to a thorough investigation in every case to see that the desired results are attained in the most economical manner. In working toward this end the Secretary has received the loyal support and assistance of the chiefs of bureaus and commanders of navy yards, who have cooperated earnestly in the endeavor to carry out the department's wishes in all matters affecting economy in expenditures of money and material.

SEA SERVICE REQUISITE.

The business of a naval officer is on the sea. It has been wisely ordered that every officer and enlisted man shall alternate his service afloat with service ashore. In a few instances this land service has been excessive. Early in the year, desiring to emphasize the paramount necessity of long sea service in every grade, an order was issued that no officer coming up for promotion should be promoted unless he had had adequate sea service in his grade. Under the operation of that order very few promotions have been deferred. The great bulk of the officers of the Navy are keen to command ships and jealous of their ability to render the service afloat for which they enter the Navy.

DESERTIONS AND PUNISHMENTS.

Some years ago desertions from the Navy were so frequent as to constitute a serious problem. It is gratifying to report that desertions are steadily on the decline. There have been fewer during the present year than formerly. The only good ship is the happy ship. The best remedy for large desertions is found in provisions for education and proper diversions. They make life aboard ship happier. Better educational facilities, trips abroad giving the benefits of travel, and the growing feeling on the part of officers that the enlisted men are their coworkers and are entitled to their friendship as well as their leadership have been the three factors toward lessening desertions. These need to be increased and strengthened, and to them should be added more avenues of promotion and better recognition of

the intelligent and efficient enlisted personnel, upon which the success of the Navy largely depends.

Punishment for desertion must be certain even in time of peace, but modern students of sociology have come to an agreement in the belief that humiliating punishment should not be inflicted when methods of correction that carry no humiliation can be safely employed. In the old days the youth who absented himself from his ship for a few days was treated as a criminal. Latterly he is not put in that class. In the Navy to-day no young man for his first offense in time of peace is made to wear stripes nor is he severely punished. There have been established two institutions, known as disciplinary barracks, one at Port Royal, S. C., the other at Bremerton, Wash., which are, in reality, schools of correction. No stripes are used in these schools and young men guilty of their first offense of desertion are sent to these reform schools. Here they are given hard tasks and made to understand that desertion is a serious offense; but the humiliation of stripes is withheld in the hope that such leniency will cause them to redeem themselves. Experience at these barracks has borne out the theory. Most of the young men sent to them for desertion have been diligent and conducted themselves in such a manner as to justify their being returned to their ships, and those who have returned have in most instances justified the wisdom of this new and better policy.

RELIGIOUS LEADERS NEEDED.

It is a reproach to our country that we have only the same number of chaplains in the Navy in 1913 as there were in 1842. Then with 24 chaplains there were 1,514 officers and 12,000 enlisted men. Now the number of officers and enlisted men has grown to 3,600 officers and 61,000 men. Only the number of chaplains has remained stationary. Our ships have changed from small wooden sailing craft to mighty armored dreadnaughts. The old sailor of ante-bellum days, if he could come back, would see all things made new, trebled and quadrupled, but he would find we had neglected to maintain growth in religious direction. There is need of an immediate increase in the number of men who are charged with the high duty of leading men afloat to a recognition of the truth that man's first and highest obligation is to his Maker. I earnestly recommend an immediate recognition of the need of more leaders in the higher life on board our ships. I recommend additional chaplains and an appropriation to enable the Secretary to employ on every ship that has no chaplain a young religious leader known as a welfare secretary. It has been urged by wise and patriotic leaders that there should be a chaplain for every 1,000 men in the service. The country will, I am sure, warmly approve the suggestion that not less than

60 chaplains or welfare secretaries should be authorized. The law regulating the apportionment of chaplains should be changed so that all chaplains when first designated shall be appointed for a term of three years as acting chaplain, not to be named as permanent until he has in actual service demonstrated his fitness for the service. The qualities that make a minister successful in a pastorate ashore are not always those which equip him for the special sort of service required of a chaplain in the Navy. Therefore, every new appointment should be probationary, permanent designations to depend upon success in reaching the men to whom chaplains are to minister. The chaplains should have the guidance of the work of all men charged with uplift work, but I believe that, in addition, there is need for adopting modern and approved methods of reaching and influencing the young men who have left their homes to man American ships. The chief problem with the church leaders, on land as well as on sea, is how to reach the young men. It is even a greater problem afloat than ashore, for the young men who enlist in the Navy are suddenly removed from the refining and restraining influences of the home. If there is any duty which the Government owes more than another to those youths who answer its call, it is to surround them with helpful influences. Many officers realize the needs of the youths, and seek to aid them in right directions, but find that they are not better fitted to lead them in religious work than are employers of many young people in the civil walks of life. They feel the need for a vitalizing religious influence aboard ship. Where can men be recruited for this highest service to men and officers? The chaplains do a noble work and no commendation could be too high for the deserts of naval chaplains. But, just as in all the churches, organization of societies for young people has been found necessary to draw out all that is best in youths, so on shipboard there is felt the need for a leader, young and enthusiastic, who will enter into the feelings and ambitions of the young men, and direct them in their athletics and entertainments as well as in their religious life. Young Men's Christian Associations have proven the best shore stations for young men in many communities. Other organizations of young men in Catholic and Protestant churches have been helpful influences for giving the right direction to young men looking for exercise and clean living and clean thinking. The Navy should be up with the age. In addition to our chaplains and the good work they accomplish, the best thing that can be done for the young men on shipboard is for Congress to authorize the employment of a welfare secretary on board every ship in the Navy, at naval stations and at other places where young men are trained or enlisted, in addition to the chaplains. There is an indefinable sympathy and interchange between young men that makes it wise to call young men

to lead in the forward religious movement on shipboard. The trial of a Y. M. C. A. secretary on a few ships as leader in religious thought, Bible study, athletics, and entertainment, was so successful as to make it certain that enthusiastic young religious leaders are needed on every ship. These consecrated and talented leaders must have the enthusiasm of youth and must themselves love the pleasures that appeal to youth. They should be given no permanent position and the tenure of their place should be measured by their ability to gain the confidence and the cooperation of the young officers and enlisted men, as well as being intelligent leaders in all things that make for their welfare. Experience has taught us that, with rare exception, an old or middle-aged man lacks the enthusiasm and adaptability to enter fully into the thoughts and plans of boys and young men on the ships. There is kindred feeling between men of the same age that leads to confidences which form the basis for enabling a young religious leader to help those of like age. Therefore the best money Congress can appropriate to lift up the standards of the Navy to even higher planes, is to authorize the securing of the best religious leaders from young men who feel called to lead their fellows, and whose chief happiness is in comradeship and helpfulness.

OPENING NEW DOORS.

The best impulse that can be given to the enlisted men in the Navy is to open new doors to advancement and promotion. Thousands every year come into the service, bringing the talents and the ambitions essential to the production of our best American citizenship. It was once true that there was no chance of promotion from raw recruit to admiral, except in the case of a genius to whom metes and bounds count for naught. There are too few opportunities now for the capable and aspiring enlisted men, though year by year new doors of hope and opportunity are opened to them. Congress should seek to make the way to high station easier to enlisted men. The avenue from the man below decks to the admiral should be made easy. It is now too difficult and promotion from the ranks needs to be facilitated. Under present laws 12 warrant officers may be appointed as ensigns each year. Whether it be because the examinations are too hard, or for some other reason, comparatively few men obtain these promotions. I am gratified to say that four successfully passed the examinations and have been appointed this year. I am studying and conferring with the best-posted men in the hope of outlining in my next report a method of promotion that will enable bright young sailors to become ensigns before they are middle-aged men, and to make easier the advancement from recruit to rear admiral. Encouragement to such promotion would prove the best stimulus to increased

enlistment and to excellence of service. In the act of August 22, 1912, Congress authorized the appointment of 30 additional assistant paymasters in the Navy. Twenty were appointed from civil life and 10 remained to be recommended by the present Secretary. There were many applicants with influential backing. It seemed to the Secretary that the 10 positions to be filled offered the only opportunity given to him to open a new door to the enlisted men to take the examination as assistant paymasters. That order carried a practical evidence of desire to secure more promotion for the men who did not enjoy the advantages of an Annapolis training. Many began to study to prepare themselves for the examination. Those who made the highest marks will be appointed and the Navy will reap the benefit of their experience in the Navy in these positions of usefulness and honor. Those who have been promoted from the ranks have shown themselves worthy. A steadily increasing number of promotions of those who demonstrate their fitness will give a new stimulus to all who enlist and upon whom the efficiency of the personnel of the Navy largely depends.

COMPETITIVE APPOINTMENT.

The high ethics of the naval personnel forbids the existence of any spirit of favoritism or the denial of just and equal opportunity to all. It is hoped that the day will come—and that soon—when all Congressmen who have the right to name midshipmen to the Naval Academy will name the youths who demonstrate their capacity in competitive examinations. The criticism of the examinations for entrance at Annapolis comes in a large measure because in some instances, in making selection of midshipmen, more consideration is given to a young man who is a friend of the appointing power or because of his father's influence than to the demonstrated brightness and capacity of the youths who desire the appointment. Experience has shown that youths admitted to Annapolis by fair competitive examinations rank higher than those who enter without competition. No appointments are made in the civil departments of the Government without competitive examinations. The question presses whether appointments of future naval officers would not be improved by the competitive method.

MERIT THE ONLY TEST.

The only door through which officers enter the service should be that of demonstrated merit. That rule generally prevails. The Naval Academy is a testing plant and it separates the fit from the inefficient by a system that knows no favorites. The youth who comes through that training and regimen is fit and prepared. No accident or favoritism of "adaptability" or "probable efficiency"

prevails there or elsewhere in the naval service. Those tests, often unfair or tinged with favoritism, have been relegated to the past. Merit, ascertained by methods that put every applicant upon an equal footing, is the only rule for entrance into naval service. During the present year, in recommending 19 second lieutenants for appointment in the Marine Corps, the Secretary discarded the arbitrary marks of "adaptability." The relegation to the rear of this ancient protection to possible favoritism was approved by the confirmation of the candidates nominated by the President. I venture the hope that it will never again stand in the way of the recognition of ascertained fitness—fitness demonstrated in honest competition.

LARGE INCREASES OF ENLISTMENTS.

The department has emphasized its policy to raise the standard of the enlisted man on board ship, with a view to increased efficiency, by attaching to the service the most desirable and retaining them after they have become useful to the Government. Opportunities for advancement have been given, educational features established to fit them for advancement, and encouragement given to all to make use of these advantages. The department's plan of giving publicity to the Navy, as well as of sending the battleships on an occasional foreign cruise, also attracts desirable men to the service. As a result of this policy, the number of enlistments for the five months ending October 31, has been unprecedented, as the recruiting records show, being larger than in any like period since the Spanish-American War. During the same period in 1909, there were 6,102 enlistments; 1910, 6,005; 1911, 7,170; 1912, 7,190; and in 1913, 8,448. At this rate, it is expected that the full quota of 51,500 enlisted men, of which the Navy was 2,500 short on July 1, 1913, will be entirely filled within a few months. The full quota of the Marine Corps was filled in October.

This gratifying increase in numbers has been coincident with a policy of raising the standard for admission. There has been a rigid exclusion of those not morally or physically fit, and in more than one instance men who enlisted to escape prosecution for crime were expelled from the ships, and notice given that the Navy was the place only for young men of character and merit, and no others would be retained.

RETIRED PAY.

The annual sum paid to officers and men during the past year was \$36,355,621.99, of which \$3,239,864.56 was for retired pay. This sum of retired pay seems excessive. Means should be found to reduce the amount. The country believes that officers who have rendered long service should be retired with such annual retired pay as to show a nation's appreciation. It is unjust, however, to taxpayers that the

same retired pay should be given to those who retire because of some slight defect which, while impairing their efficiency for naval service, does not unfit them for earning their living in other occupations or professions. Only a few days ago a case was presented of a young officer who had developed defective vision. He was recommended for retirement. Otherwise, he was perfectly well, and this defect did not disqualify him for any service except as a line officer. For such officers defective vision is fatal. When the recommendation for retirement came up investigation showed that under the retirement law he would be entitled to receive \$77,000 from the Treasury if he lived out his allotted years. I held up the retirement, and he will be assigned to other duty than navigation. There was no other alternative except to give him the retirement and \$77,000 or continue him with this serious impairment in the service. There is need for a graduated retirement law, by which young men in good health, although disqualified for the naval service on account of some slight defect, such as impaired vision, shall not receive the same retired pay as that given to a man entirely incapacitated or to one who has devoted many years of his life to the service.

HEALTH AND SANITATION.

Care for the health of the men and the officers reached the high-water mark in the past fiscal year. The hospitals are manned by skilled surgeons and physicians, nurses and hospital officers, and employees of exceptional capacity and training. No man in the service lacks the tenderest care and the best treatment. The *Solace* is a floating hospital that is an honor to the American Navy, and its record is one of which the department is proud. On board every ship the ship's surgeon gives better care than men in civil life receive in any line of endeavor. Better ventilation on ships, better systems of sanitation, and consideration of new methods for preventing disease, are adding to the efficiency of the men in the service, lessening disease, and relieving suffering.

The obligation imposed upon the department is to maintain the fleet for the defense of the country and to enforce the policies of the men charged with the administration of public affairs. That obligation is faithfully performed. There has been no occasion when the fleet was not ready on a day's notice to move, fully armed and equipped, for any service in any waters. Upon the few occasions, during the year now drawing to a close, that ships have been needed to promote peace and protect Americans, they have been in such state of preparedness as to deserve the pride the American people take in their Navy. At all times the personnel has given proof that naval officers and men in the ranks respond with alacrity to any call, no matter what hardships a ready response imposes.

Services in the Caribbean Sea and in the Gulf of Mexico, and on the Pacific in recent months, have been trying and have imposed sacrifices. But the sailormen have illustrated "their's not to reason why" as patriotically as have their fellows who have gone gloriously into battle whenever their country needed them. In high ethics, in love of country, in the love of their calling, which makes them count not their lives dear unto themselves, the men in the American Navy embrace the highest types of our American manhood. They deserve the honor given them by their countrymen, and it is a privilege to bear testimony to the noble patriotic love of duty that makes them put their calling above all other considerations. The ship is their home, the command of the commander in chief their call to duty, and devotion to the flag their passion. The Republic will approve generous appropriations to keep the Navy fit for every use, and to give instruction and education to the 60,000 men, so that in peace the Navy is training men for useful pursuits of industry, if happily war may not fall upon our long-favored country. We must keep our Navy in a state of preparedness, therefore, for peace as well as for war.

Respectfully submitted.

JOSEPHUS DANIELS,
Secretary.

REPORT OF THE JUDGE ADVOCATE GENERAL.

NAVY DEPARTMENT,
OFFICE OF THE JUDGE ADVOCATE GENERAL,
Washington, November 1, 1913.

From: Judge Advocate General.

To: Secretary of the Navy.

Subject: Annual Report of the Judge Advocate General of the Navy.

There is submitted herewith the annual report of the operations of this office for the fiscal year 1913.

GENERAL COURTS-MARTIAL.

Charges and specifications drawn up in this office during the fiscal year.

	Navy.	Marine Corps.	Total.
Officers.....	8	4	12
Enlisted men.....	1,133	276	1,409
Total trials ordered by the Secretary of the Navy.....	1,141	280	1,421
Charges withdrawn:			
To other courts-martial.....			1
On account of physical disability.....			3
Prisoners escaped.....			10
By order of the department.....			6
Nolle prosequi.....			1
Charges drawn, but trials not completed before end of fiscal year.....			15
Total trials not completed.....			36
Cases tried by order of the Secretary of the Navy.....			1,385

Trials held at each naval station.

Portsmouth, N. H.	32
Boston, Mass.	102
New York, N. Y.	385
Philadelphia, Pa.	238
Norfolk, Va.	272
Mare Island, Cal.	211
Puget Sound, Wash.	65
Charleston, S. C.	17
Newport, R. I.	15
Port Royal, S. C.	7
Camp Elliott, I. C. Z., Panama	7
Special	24
Total	1,385

Trials by order of officers of the Navy authorized to convene general courts-martial.

	Navy.	Marine Corps.	Total.
Officers	17	1	18
Enlisted men	191	101	292
Total	208	102	310

Total trials.

	Navy.	Marine Corps.	Total.
Officers:			
By order of the Secretary of the Navy	7	3	10
By order of officers of the Navy	17	1	18
Total	24	4	28
Enlisted men:			
By order of the Secretary of the Navy	1,104	271	1,375
By order of officers of the Navy	191	101	292
Total	1,295	372	1,667
Grand total	1,319	376	1,695

Trials of officers.

Convicted	27
Acquitted	1
Total	28

Trials of enlisted men.

	Navy.	Marine Corps.	Total.
Convicted	1,259	362	1,621
Acquitted	34	10	44
Disapproved	2		2
Total	1,295	372	1,667

Schedule of principal offenses.

	Navy.	Marine Corps.	Total.
OFFICERS.			
Absence over leave.....	3		3
Absence without leave.....	1		1
Absence without leave, conduct unbecoming an officer and a gentleman, and scandalous conduct tending to the destruction of good morals.....		1	1
Absence without leave, embezzlement, and neglect of duty.....	1		1
Drunkenness.....	3		3
Drunkenness, absence over leave.....	1		1
Drunkenness, absence without leave.....	1		1
Drunkenness on duty.....	2	1	3
Drunkenness and neglect of duty.....		1	1
Drunkenness and conduct unbecoming an officer and a gentleman.....	1		1
Drunkenness and scandalous conduct tending to the destruction of good morals.....		1	1
Drunkenness on duty and sleeping on watch.....	1		1
Drunkenness and wilful injury to Government property.....	1		1
Embezzlement, violation of a lawful regulation issued by the Secretary of the Navy scandalous conduct tending to the destruction of good morals, rendering a false and fraudulent return, culpable negligence and inefficiency in the performance of duty, neglect of duty, conduct to the prejudice of good order and discipline, and falsehood.....	1		1
Hazing.....	2		2
Improperly hazarding the vessel under his command, in consequence of which she was run upon a shoal and seriously injured, and through inattention and negligence suffering a vessel of the Navy to be run upon a shoal and seriously injured.....	1		1
Neglect of duty.....	2		2
Scandalous conduct tending to the destruction of good morals.....	2		2
Total.....	23	4	27
Acquitted.....	1		1
Total.....	24	4	28
ENLISTED MEN.			
Absence without leave.....	151	26	177
Absence without leave and breaking arrest.....	5	2	7
Absence without leave and fraudulent enlistment.....	1		1
Absence without leave and conduct to the prejudice of good order and discipline.....	20	5	25
Absence without leave and scandalous conduct tending to the destruction of good morals.....	4	4	8
Assaulting and striking another person in the Navy.....	10	1	11
Aiding and abetting larceny.....		2	2
Assaulting and striking, or threatening to assault and strike, his superior officer.....	4	6	10
Assaulting with a deadly weapon and wounding another person in the service.....	4	2	6
Breaking arrest.....	3	12	15
Conduct to the prejudice of good order and discipline.....	45	19	64
Desertion.....	590	118	708
Desertion and fraudulent enlistment.....	75	30	105
Desertion and breaking arrest.....	6	1	7
Disobeying a lawful order of his superior officer.....	10	16	26
Disrespectful in language and deportment to his superior officer.....	6	1	7
Drunkenness.....	5	4	9
Drunkenness on duty.....	10	19	29
Falsehood.....	1	1	2
Embezzlement.....	4	1	5
Fraudulent enlistment.....	181	28	209
Leaving station before being regularly relieved.....	1	7	8
Manslaughter.....	1	1	2
Neglect of duty.....	2	2	4
Perjury.....	4		4
Refusing to obey the lawful order of his superior officer.....	18	5	23
Resisting arrest.....	1	1	2
Maltreating an inhabitant ashore.....	1		1
Scandalous conduct tending to the destruction of good morals.....	43	18	61
Sleeping on watch or post.....		17	17
Sodomy.....	9		9
Theft.....	29	9	38
Theft, and conduct to the prejudice of good order and discipline.....	3		3
Theft, and scandalous conduct tending to the destruction of good morals.....	2		2
Using abusive, obscene, and threatening language toward another person in the service.....	1	1	2
Violation of article 14 of the Articles for the Government of the Navy.....	9	3	12
Total.....	1,250	362	1,612
Acquitted.....	34	10	44
Disapproved.....	2		2
Total.....	1,295	372	1,667

Schedule of principal offenses.—Continued.

SUMMARY COURTS-MARTIAL.

	Navy.	Marine Corps.	Total.
Records received and revised.....	9,946	2,487	12,433
Cases disapproved by the department.....	111	22	133
Acquitted.....	170	30	200
Bad-conduct discharges.....	1,573	373	1,946
Average trials per month.....	829	207	1,036

DECK COURTS.

	Navy.	Marine Corps.	Total.
Records received and revised.....	7,285	2,483	9,768
Disapproved.....	62	4	66
Acquitted.....	65	11	76
Average trials per month.....	607	207	814

Percentages of enlisted personnel in the Navy and Marine Corps tried by court-martial.

	Navy.	Marine Corps.
Total enlisted force July 1, 1912.....	47,515	9,777
Enlisted during the year.....	17,611	4,042
Total during the year subject to trial.....	65,126	13,819
Tried by general court-martial during year.....	1,295	372
Percentage tried by general court-martial.....	1.99	2.70
Tried by summary court-martial during year.....	9,946	2,487
Percentage tried by summary court-martial.....	15.27	18.00
Tried by deck court during year.....	7,285	2,483
Percentage tried by deck court.....	11.18	17.97

MISCELLANEOUS.

Courts of inquiry received and revised.....	96
Courts of inquiry followed by courts-martial.....	13
Courts of inquiry followed by action other than courts-martial.....	18
Courts of inquiry in which no further action was deemed necessary.....	65
Boards of investigation received and revised.....	238
Boards of inquest received and revised.....	89

EXAMINING BOARDS.

Officers of the Navy:	
Examined for promotion.....	331
Failed professionally.....	4
Failed morally.....	2
Failed physically.....	16
Action on cases suspended.....	7
Disapproved.....	2
Qualified for promotion.....	300
Officers of the Marine Corps:	
Examined for promotion.....	29
Failed physically.....	5
Qualified for promotion.....	24

RETIRING BOARDS.

Officers of the Navy.....	49
Officers of the Marine Corps.....	8
Total.....	57

EXAMINING BOARDS OF CANDIDATES FOR ADMISSION TO THE NAVY AS OFFICERS.

Line (warrant officers examined for appointment as ensigns):	
Examined	6
Failed professionally	4
Qualified and appointed	2
Medical Corps:	
Examined	80
Failed professionally	9
Failed physically	5
Withdrew	3
Qualified and appointed	13
Medical Reserve Corps:	
Examined	79
Failed professionally	7
Failed physically	4
Withdrew	4
Qualified and appointed	64
Dental Corps:	
Examined	50
Failed professionally	2
Failed physically	23
Withdrew	8
Qualified and appointed	17
Dental Reserve Corps:	
Examined	3
Qualified and appointed	3
Pay Corps:	
Examined	42
Failed professionally and physically	2
Failed professionally	13
Failed physically	2
Qualified and appointed	25
Chaplains:	
Examined	5
Failed professionally	2
Failed physically	2
Qualified and appointed	1
Corps of Civil Engineers:	
Examined	3
Qualified and appointed	3
Total number of examinations for promotion, Navy and Marine Corps	360
Total number of examinations for retirement, Navy and Marine Corps	57
Total number of examinations for admission, Navy	218
Total	635

There was a general increase in the number of records of courts and boards revised in this office during the past fiscal year. The greatest increase was in the number of summary courts-martial, which increased from 11,066 during the fiscal year 1912 to 12,433 during the fiscal year 1913.

* * * * *

ADMINISTRATION OF JUSTICE IN THE NAVY.

The detention system for the punishment of persons in the Navy and Marine Corps convicted by general courts-martial of military offenses, which system was explained at some length in my annual report for 1912, has been continued with gratifying results. During the past fiscal year naval disciplinary barracks were maintained at Port Royal, S. C., and at the navy yard, Puget Sound, Wash. The annual report of the naval disciplinary barracks at Port Royal for 1913, shows that a total of 854 cases were handled at said barracks during the year, including 268 men remaining over from the previous fiscal year and 586 new cases received from July 1, 1912, to June 30, 1913. In all these cases the men had been sentenced by general courts-martial to confinement at hard labor, a large proportion of the sentences also including dishonorable discharge. However,

under the department's action in said cases, the sentences were mitigated to detention and the men, instead of being required to serve their sentences in naval prisons, were transferred to the naval disciplinary barracks at Port Royal, S. C., subject to the conditions and benefits specified in the rules and regulations governing said barracks, the substance of which was set forth in my last annual report. Of the 854 men who, instead of being required to serve sentence at a naval prison, were transferred to the disciplinary barracks at Port Royal, 3 were later transferred to the Government Hospital for the Insane, and 367 were still undergoing detention at said barracks on June 30, 1913, their cases not having been finally disposed of, either because of the short time they had been at the disciplinary barracks, or for other reasons. Of the remaining 484 men who were transferred to the disciplinary barracks a total of 348, or about 72 per cent, may be regarded as having "made good" so far as shown by the results on June 30, 1913. Thus, on the date named, 214 of these men had been unconditionally restored to duty in the service at large, 102 were serving a probationary period at the disciplinary barracks with a view to their unconditional restoration to duty, and 32 had been discharged from the service with recommendation for reenlistment. In the annual reports from the naval disciplinary barracks, Port Royal, are found the following statements:

From the commanding officer's report:

During the year the scope of the drills has been extended, and greater care has been used in training detentioners. The result has been most satisfactory as is shown by the neat and well-set-up appearance of the battalion of detentioners. All detentioners, including all rates, are drilled at least one month before being placed on special details, such as would be required of their rates on board ships. Detentioners are also required to perform guard duty within the detention inclosure and barracks.

Greater care has been taken in selecting probationers for complete restoration to duty. These men are required to drill and perform regular guard duty in addition to carrying out the duties required of their rates.

It is believed that excellent results may be obtained in starting classes at this post for radio operators, electricians, mechanics, yeomen, bakers, and cooks. As soon as it is possible for the Bureau of Navigation to furnish suitable instructors this work will be taken up.

From the medical officer's report:

The health of the detentioners in general has been excellent.

From the chaplain's report:

The moral atmosphere of the station, so far as I have been able to judge, is good. The men appear to be contented and are trying to make good.

The following excerpts are taken from a report made to the department July 10, 1913, by the Board of Inspection for Shore Stations:

The principal object of the detention system, as outlined in the report of the Judge Advocate General, page 99, 1912, is "to transform the offender against law and discipline into a useful member of the service, instead of simply giving him a term of imprisonment and then turning him adrift without the credentials generally necessary to secure honest employment in civil life, as was done under the old methods. However, aside from the help given the individual, if we succeed in reforming and retaining in the service, instead of dishonorably discharging, a certain number of our enlisted men, we have made an appreciable financial saving to the Government, because it costs a large sum of money to enlist, transfer to one of the coasts, and supply original outfits of clothing and give the first instruction to each recruit. In addition, in the case of prisoners

restored to duty instead of being dishonorably discharged from the naval service the Government saves the cost of civilian clothing, transportation, and cash gratuity which the law provides for furnishing to discharged naval prisoners."

While the work done at the Port Royal Naval Station has only been carried on for two years, the results are exceptionally satisfactory. This is evident by the physical and moral condition of the detentioners and probationers. It is manifest in the spirit of manhood and hope that has been aroused in these men, and it is noted in the increased confidence and general betterment of the men under observation. It is to be noted that the average percentage of men that have been restored to duty is about 70 per cent of those received at the barracks. The system well deserves extension.

The reformatory work done at Port Royal is neither of a maudlin nor of a sentimental character. The discipline is firm, consistent, and continuous. Both the detentioners and probationers are given clearly to understand that mitigation of sentence imposed upon them by general courts-martial can only be obtained by good conduct and service upon the part of those under restraint.

The chaplain of the station reports that from personal observation it is believed that the work done at Port Royal comes nearer solving the prison question than any other penal action that he has ever seen taken.

The men are given clearly to understand that they are under restraint by reason of offenses committed by them, and that only the deserving will be accorded leniency and consideration. It is likewise made known to them, however, that the spirit and purpose of the system is intended to be of an uplifting and humanitarian character.

The board especially observed the almost entire absence of prison aspect. It was, however, patent that it was not the intention to render the detentioner's existence attractive, as was attested by the rigid routine of drills and labor which continues unceasingly.

The condition of the station respecting orderliness, cleanliness, and police is excellent. There is throughout the station evidence of constant care and supervision. The sanitary condition obtaining at and adjacent to the station is very good.

The general health of the command has been exceptionally good since its establishment. The climate seems especially well adapted. The location is also favorable for training purposes, since out-of-door drills and physical exercises can be carried on throughout the entire year.

The board was greatly impressed by the success already achieved and is of the opinion that a very great work is being done at this station, which will greatly militate for the good of the service.

The success achieved at the detention barracks may be ascribed in part to the continuous, uniform, and useful employment assigned both detentioners and probationers.

Continuous and steady employment is essential to the physical and moral welfare of the men, as well as to their future usefulness. It is believed that various trade and vocational schools can be established at the station to the betterment of the men and to the advantage of the service. The instruction of particular detentioners along special vocational lines wherein these men possess marked aptitude, would undoubtedly act both as an incentive and spur in arousing the men to higher purpose and to renewed confidence in themselves.

The board therefore strongly approves the proposition to extend the vocational instruction of detentioners and probationers in helping to develop blacksmiths, firemen, boilermakers, coppersmiths, carpenters, yeomen, bakers, cooks, and other trades and vocations concomitant with service on board ship. The development of such a work, however, would entail the detail of an additional number of chief petty officers of high ability and character.

It is considered that the various manufacturing bureaus of the Navy Department might temporarily assign for the use of the station certain machine tools which, while not particularly adaptable for turning out work in an economical and expeditious manner, would still possess marked value for instruction and vocational purposes.

Last February a radio station was established, with the object in view of training a class of radio operators.

It is pertinent to state that, while considerable initial expense might be involved in providing the necessary shops, the care and maintenance, in great part, of both buildings and equipment could be intrusted to the detentioners. The development of vocational training appears a necessity to the efficient continuance of the detention system; otherwise employment of the men must

be limited to routine drills and perfunctory duties, which could not possibly have the uplifting value that systematic vocational training would give.

In connection with, and to render possible, the establishment of vocational schools at this station, as has been herein recommended, certain additional petty officers of the Navy are required, viz: A chief machinist's mate for the machinists' school; a chief electrician for the electrical school; and an additional yeoman, as the present chief yeoman will be mainly concerned with the yeomen's school. Two additional hospital apprentices are also required, not only at the present time, but in view of the increased number of detentioners.

The board witnessed an inspection and review of the battalion followed by a dress parade. The battalion consisted of one company of marines, four of sailors (all detentioners and probationers), one section of artillery manned by marines, and an extemporized band. The board inspected in detail the arms and equipment, and especially noted the dress and personal appearance of the battalion, all of which details were excellent.

The board was particularly impressed by the fine physical appearance of the sailors, their earnest mien, fine swinging step, and in general, the excellent military appearance.

The board is convinced that the detention system now being developed at Port Royal will result in reclaiming many good men for the Navy and Marine Corps. The country at large will also be benefited, for when these detentioners sever their connection with the service they will not only find themselves much better equipped morally and industrially to meet the exigencies of life than they were on entering the service, but it can also be expected that they will be appreciative of the consideration that has been accorded them, and will, therefore, in time of emergency not only volunteer for active duty, but will prove useful men in the service.

The spirit of confidence and hopefulness now existing among the detentioners and probationers undoubtedly shows that the principles governing the establishment and operation of the detention system are along the most progressive penal and humanitarian lines.

In addition to the cases of men convicted by general court-martial whose sentences are immediately mitigated to detention, there are a great many cases in which men are transferred to disciplinary barracks after serving a period of their original sentences in a naval prison, during which time their conduct and desirability for retention in the naval service is carefully observed by the prison authorities and reported upon to the department. With reference to this practice the commanding officer of the prison ship at the navy yard, Puget Sound, Wash., makes the following comment in his annual report for the fiscal year 1913:

A large proportion of the prisoners become eligible and are transferred to the disciplinary barracks. In this connection it is believed that the prospect of ultimate transfer to the barracks, with the likelihood of being restored to duty, is in a great measure responsible for the amenability of the average prisoner to prison discipline.

It is believed that the condition described in the report quoted is also attributable in large part to the fact that men confined in naval prisons are no longer exposed to the contaminating influences incident upon association with "criminals," properly so called. As stated in my annual report for the last fiscal year, persons in the Navy convicted of offenses involving moral turpitude or violation of general laws of the country are now sent to State prisons, while men sent to naval prisons belong to an intermediate class whose previous records do not justify sending them to disciplinary barracks. However, the fact that while confined in naval prisons they are not exposed to the humiliation and degrading consequences of being associated with common criminals, allows them to retain a certain degree of self-respect which would hardly be possible if men of criminal classes

were sent to the same institution. When there is added the hope of being transferred to disciplinary barracks and ultimately restored to duty, should they give promise of reform, it may readily be seen that the best possible results should be obtained in their cases under the present system; and the above-quoted report from the commanding officer of the prison ship at the navy yard, Puget Sound, Wash., shows that in this respect expectations have not been disappointed. I am therefore more strongly than ever of the opinion that the best interests of the Navy, as well as of the men concerned, demand that naval prisons be used exclusively for the confinement of *military* offenders, and that men convicted of "criminal" offenses continue to be sent to State prisons as at present, instead of being associated with military offenders to the almost certain detriment of the latter.

The scope of the detention system has been greatly enlarged during the past year. Thus, for example, most deserters who surrender, and all deserters under 21 years of age, are now sent to disciplinary barracks in the first instance instead of being required first to serve a portion of their sentences in naval prisons. As the proportion of convicted offenders sent to disciplinary barracks increases, it naturally follows that there is a corresponding decrease in the number of men confined in naval prisons. The result, already apparent, is that the naval prisons and prison ships, which, prior to the inauguration of the detention system, were inadequate and constantly overcrowded, are now ample. Accordingly, no appropriations for the increase or enlargement of naval prisons and prison ships are necessary, and, in my opinion, no such appropriations will be required, even in consequence of authorized increases in the naval personnel. However, as the detention system becomes more permanently established and its scope enlarged, appropriations for the naval disciplinary barracks, both on the Atlantic and Pacific coasts, become an urgent necessity. At the outset, the success of the detention system being at least problematical, practically no expenses whatever were incurred in its inauguration. The disciplinary barracks at Port Royal, S. C., and also at the navy yard, Puget Sound, Wash., consist of old buildings which were formerly used by the Marine Corps and which were made available for their present purpose without any special appropriations whatever being requested or obtained therefor. The consequence is that if these disciplinary barracks are to be a permanent institution the buildings now in use will of necessity require extensive repairs and in some cases must be replaced, while additional structures should also be erected.

The naval disciplinary barracks at the navy yard, Puget Sound, Wash., were established shortly before the close of the fiscal year 1912, so that these barracks have actually been in operation only a little over one year. During this period the detentioners have been occupied largely with work necessary in improving the old buildings which constitute the barracks, in remedying insanitary conditions, and in adapting the old abandoned marine barracks to their present purpose. Consequently it was impracticable to devote the time to drills and instruction necessary to do full justice to the detention system and produce the best possible results of the character for which the system was primarily intended. Nevertheless, the annual report submitted by the commanding officer of those barracks for the fiscal

year 1913 is decidedly encouraging. As shown by said report, a total of 268 cases were handled at said barracks during the year, including 61 men remaining over from the previous fiscal year, 5 detentioners who were recaptured after having escaped, and 202 new cases received from July 1, 1912, to June 30, 1913. In all these cases the men had been sentenced by general courts-martial to confinement at hard labor, a large proportion of the sentences also including dishonorable discharge. However, their sentences were mitigated to detention, and the men were accordingly transferred to the naval disciplinary barracks at Puget Sound. Of the 268 men who were thus sent to disciplinary barracks instead of being required to serve their sentences at a naval prison, 1 was later transferred to the Ukiah State Hospital for Insane, 1 was discharged from the service by medical survey, and 86 were still undergoing detention on June 30, 1913, their cases not having been finally disposed of, either because of the short time they had been at the disciplinary barracks or for other reasons. Of the remaining 180 men who were transferred to the disciplinary barracks, a total of 109, or about 61 per cent, may be regarded as having "made good," so far as shown by the results on June 30, 1913. Thus, on the date named, 68 of these men had been unconditionally restored to duty in the service at large, 27 were serving a probationary period at the disciplinary barracks with a view to their unconditional restoration to duty, and 14 had been discharged from the service, with recommendation for reenlistment. Under the circumstances, the results thus achieved are considered very creditable.

In the annual reports from the Puget Sound Disciplinary Barracks are found the following statements:

From the commanding officer's report:

Detentioners and probationers are organized into squads, sections, and companies. For the purpose of battalion drill, ceremonies, combat exercises, and practice marches, the companies are organized into a battalion which includes all the special details. * * * Inside overseers or their assistants are on duty at all times. Squad or section leaders are appointed from the detentioners and probationers, and there is keen rivalry and competition among these leaders as to the best behaved and drilled squads. * * *

There are at present 5 instructors attached to the post, consisting of 1 chief boatswain's mate, 1 sailmaker's mate, and 3 sergeants. * * *

Instruments for use in teaching the wireless codes, telegraph keys, etc., material and tools for the boatswain's and sailmaker's mates, acetylene lamps and heliographs, international flags, masts and signal yards, bollards and heavy line (to simulate handling heavy lines at docks), and sounding leads have been purchased for use of the different classes.

Two Benet-Mercie machine guns, two 3-pounder semiautomatic guns, one 3-inch field piece, and four Colt's automatic revolvers are at present on hand for use by the instructors, and requisition has been made for two semaphores and two Ardois, with keyboards. Requisition will be made in the future for the necessary number of pulling boats for use in the boat drills.

The battalion is instructed in patrolling, scouting, outposts, advance, rear and flank guard duties, cooking, march sanitation, signaling, first-aid instruction, the proper use of cover, etc. During the weekly practice marches active campaign conditions are simulated so far as practicable.

Much work has been done, and the labor necessary for constructing and repairing buildings and furnishing the post has been, with a very few exceptions, performed by the detentioners and probationers.

Shops for a carpenter, blacksmith, plumber, painter, tinner, and electrician have been established and furnished with the necessary tools and material and manned by skilled men taken from the personnel. It is believed that all repairs, etc., can be satisfactorily performed by the men of these shops.

The capacity of the buildings at the present time is 140 men. The marine guard is sheltered in a camp on the east end of the parade ground, consisting of 48 wall tents (two men per tent). The main barracks, a building formerly used for a post exchange, a small toilet, and an old stable now used for shop room constitute the four buildings of the post. The two last-named buildings are not suitable for housing men. There is no room available for use as a gymnasium, library, drill hall, amusement room, or target gallery, all of which are ordinarily important in an institution of this kind, but which are especially so here, owing to inclement weather throughout the winter season and the necessity during this period of men receiving their instructions and amusement indoors. Should it be the intention of the department to maintain the barracks at its present location, it is urgently recommended that steps be taken to construct a modern barracks building containing facilities for a more advantageous housing, training, and amusement of the personnel. One hundred men of the marine detachment are under canvas, which, to say nothing of the discomfort of the men during the winter season, is an extremely expensive method of shelter.

The food has been of good variety and well cooked and served. The steward, cooks, messmen, and bakers are appointed from the detentioners, probationers, and marine guard. These men are responsible for the cleanliness of the kitchen, mess hall, and mess gear. The seating capacity of the dining room is about 160 men.

From the medical officer's report:

The general health of the command has been excellent, with no epidemics and no serious diseases. * * *

There has been no fault to find with either the food or water supply.

While the weather during the winter season has interfered with outside drills at the disciplinary barracks at the navy yard, Puget Sound, Wash., it is recommended that no change be made in the location of said barracks, but that they be continued as a permanent institution. The great advantage of the present location is the fact that the buildings and grounds have been so improved and fenced in as to furnish room for housing, drill, and proper guarding of detentioners and probationers. The most urgent repairs having been made, a period has been entered upon during which there will be more time devoted to drills and instructions and more men available for same, with the natural result that the efficiency of observation and training will be increased. To remove the barracks to another location not fully prepared would mean at least another year of manual labor on the part of a large number of the personnel and the consequent reduction of time devoted to their training for a return to the fleet. Should the detention system be so enlarged and extended in the future as to require appropriations for a second barracks on the Pacific coast, it is recommended that they be constructed at San Diego, Cal., as additional to the disciplinary barracks at present maintained at Puget Sound instead of abandoning the latter.

Our coasts are so long, involving such great expense for transportation, that there should be at least two disciplinary barracks on each, the Atlantic and the Pacific coast. In this connection it may be noted that at the present time on the Pacific coast there is but one naval prison, that located at the navy yard, Mare Island, Cal., which has a capacity of only 124 prisoners. In addition, there is a prison ship, the *Philadelphia*, stationed at the navy yard, Puget Sound, Wash., the capacity of which is 100 prisoners. Therefore, eliminating the disciplinary barracks at the navy yard, Puget Sound, only 224 prisoners can be confined in suitable places under control of the Navy Department on the Pacific coast. As the detention system has now

practically superseded the former method of disciplining persons in the Navy guilty of military offenses, it is obvious that adequate provision should be made for the administration of the detention system, particularly on the Pacific coast, where the facilities for confining court-martial prisoners are, as stated, so greatly restricted. Furthermore, after the opening of the Panama Canal the need of adequate facilities for the disciplining of men serving court-martial sentences on the Pacific coast will doubtless be almost as great as on the Atlantic seaboard. In view of the foregoing and the further fact that it is even now necessary to shelter enlisted men in tents at the naval disciplinary barracks, Puget Sound, I again strongly recommend that steps be taken for the erection of a suitable disciplinary barracks building, to be located on the site of the present United States Naval Disciplinary Barracks at the navy yard, Puget Sound, Wash., at an estimated cost of \$75,000.

The various naval prisons and prison ships are in efficient condition. In reports received in this office special emphasis is laid by medical officers on duty in connection with said prisons upon the satisfactory sanitary conditions existing thereat and the generally good health of the prisoners. Thus, the post surgeon at the marine barracks, navy yard, Norfolk, Va., makes the following report with reference to the naval prison at said station:

The general sanitary condition of the prison for the last fiscal year has been excellent. At all inspections the prison has always been clean and well ventilated. * * * In fact, to sum up, there is no criticism that could be made of the general condition of the prison and its accessories.

This is shown in the general condition of the prisoners themselves. During the year there has not been a serious case of any disease in the prison, though from time to time prisoners have received treatment for minor complaints, as decayed teeth, colds, and minor injuries while at work.

The medical officer on duty at the naval prison at the navy yard, Boston, Mass., reports as follows:

The prison is in excellent condition. It is kept scrupulously clean, the food is wholesome and sufficient, as shown by the fact that gains in weight, due to sufficient food, wholesome exercise, and proper living, are the rule.

During the past fiscal year the U. S. S. *Philadelphia* was fitted out as a prison ship at the navy yard, Puget Sound, Wash., replacing the U. S. S. *Nipsic*. The annual report of the medical officer of the *Philadelphia* contains the following:

The prison ship *Philadelphia* is a steel ship of comparatively recent construction, and is considered well fitted for her present use. She is moored on the other side of the dock from the U. S. S. *Charleston*, far enough from shore so that the sewage, etc., is properly removed by currents and tide.

The drinking water is obtained from the supply provided for navy yard use. It is plentiful, of good quality, and is supplied from the "bubbling-spring" type of fountain. Fresh water is used in the wash rooms, and no salt water is used on the ship except occasionally for washing down decks.

The food supply is plentiful, of good quality, being practically the regular Navy ration, with some of the pastry and puddings left out. * * *

The general health of the prisoners during the past year has been very good, indeed, and plenty of exercise in the open and proper clothing are important factors helping to make it so. * * *

Sanitary inspections are made weekly by the medical officer, and the present condition of the ship is excellent.

The medical officer of the U. S. S. *Southery* and the U. S. S. *Topeka*, prison ships at the navy yard, Portsmouth, N. H., reports:

The general sanitary condition of the *Topeka* and *Southery* has been excellent. Living spaces, water-closets, holds, and storerooms have been maintained in a scrupulously clean condition, and the ventilation of these compartments is satisfactory.

The commandant of the navy yard, Mare Island, Cal., has the following to say in his report of conditions in the naval prison at the navy yard under his command:

The appearance of the prisoners is excellent, they, with very few exceptions, looking wholesome, strong physically, and well fed. This is due, I believe, to the active outdoor life they lead working on the streets and about the navy yard in a climate that permits of outdoor work practically every day in the year.

The food was found abundant in quantity and of excellent quality, the vegetables used being at this season mostly fresh from the prison garden and superior to the usual run of vegetables to be found in the markets. The mess room, tables, tableware, and all appliances connected with the prisoners' mess were scrupulously clean.

The chaplain of the naval prison at the navy yard, Mare Island, Cal., makes the following report with reference to the schools conducted at said prison:

The following subjects have been taught, namely: United States history, geography, grammar, spelling, and arithmetic.

The total number of different men attending the school was 186. The average number in attendance for the past eight months has been 73.

Written examinations have been held from time to time, the results of which showed that the men were interested in their studies and desired to learn.

* * * * *

The medical officer on duty at the naval prison at the United States naval station, Cavite, Philippine Islands, reports as follows:

The health of prisoners has been good. There have been no epidemics, nor has there been any disease resulting from confinement.

The prison has been inspected frequently and always found in a most excellent sanitary condition. The plumbing is kept in good repair. The galley, mess hall, ice boxes, etc., are kept very clean.

The food has been of good quality and sufficient quantity.

* * * * *

ROBT. L. RUSSELL.

REPORT OF CHIEF OF BUREAU OF YARDS AND DOCKS.

DEPARTMENT OF THE NAVY,
BUREAU OF YARDS AND DOCKS,
Washington, D. C., October 24, 1913.

From: Chief of Bureau.

To: Secretary of the Navy.

Subject: Report of operations of the Bureau of Yards and Docks for the fiscal year 1913.

The value of the work performed during the fiscal year 1913 from appropriations under the cognizance of this bureau aggregated \$6,511,043.63, divided as follows: Public works, \$4,153,755.69; maintenance of yards and stations, \$1,517,906.53; repairs and preservation of navy yards and stations, \$814,126.67; contingent, \$25,254.74.

The expenditures of funds under the cognizance of other bureaus and the Marine Corps, but supervised by this bureau, were as follows: "Depots for coal," \$332,697.32; "Coal and transportation," \$135,011.93; "Equipment of vessels," \$88,374.72; "Completion of crypt under chapel" (Naval Academy), \$67,708.52; "Gunnery exercise," \$14,658.26; Bureau of Medicine and Surgery, \$189,200.84; Marine Corps, \$193,619.14.

The total value of the work under the supervision of this bureau performed during the fiscal year amounted to \$7,532,314.36. There were 105 contracts awarded during the year, involving obligations amounting to \$2,205,298.98.

DRY DOCKS.

During the year there was completed at the navy yard, Puget Sound, Wash., dry dock *No. 2*, which will receive any naval vessel built or building, with a large margin. This dock is of concrete, with sides faced with granite, and is the largest dock so far built in the United States. The *Oregon* was successfully docked on March 1, 1913. Since then the dock has been tested, found to fulfill all contract requirements, and has been accepted.

Work on the Pearl Harbor Dry Dock has been temporarily suspended on account of foundation difficulties. The conditions are being very carefully investigated, and future procedure is receiving most careful consideration.

POWER PLANTS.

Although the power plants at the principal navy yards were consolidated before the beginning of the fiscal year, a considerable amount of work has been done toward their improvement and provisions for the most efficient operation. The power plant at Mare Island was completed during the year and that at Pearl Harbor is practically finished, as is the smaller one at Guantanamo. A new power plant for the naval torpedo station, Newport, R. I., has been designed, placed under contract, and is now well advanced. Plans have been prepared for a power house at Port Royal, for a heating plant for the naval hospital at Newport, and for an ice plant at Pearl Harbor. Considerable attention has been given during the year to preparation of instructions for the operation of navy-yard power plants and convenient forms for reporting the important features of their operation and maintenance, the different yards requiring different treatment.

PEARL HARBOR.

A large amount of work has been done during the year toward the development of this naval station. Six shop buildings, central power plant, a large general storehouse, and an administration building are practically completed. Work is in progress on six sets of naval officers' quarters, and a contract has just been signed for two additional sets of quarters. For the Marine Corps, barracks and three buildings designed for officers' quarters are practically finished. Plans have been prepared and are ready for advertisement for a gymnasium and storehouse on the marine reservation.

On Kuahua Island there are under construction by contract five magazines, shell houses, etc., and a reenforced concrete wharf is being built by yard labor. Proposals have recently been invited for six additional magazine buildings. Work on the dry dock has been temporarily suspended on account of foundation difficulties. The conditions are being very carefully investigated, and future procedure is receiving most careful consideration.

Work has been in progress during the year on a coaling station with an ultimate storage capacity of 200,000 tons, with means for rapid discharging and loading colliers or barges. Fuel-oil storage tanks with an aggregate capacity of about 33,000 tons are being installed by contract; piping and pumping equipment and foundations are being provided by station labor.

GUANTANAMO, CUBA.

Appropriations for emergency repair station and for magazines were made by act of March 4, 1911. Allotments were made from appropriation "Depots for coal," act of March 3, 1909, for 30,000-ton fuel-oil and 90,000-gallon gasoline storage installations. Allotments from appropriation "Equipment of vessels, 1913," act of August 22, 1912, have been made for a radio station comprising two 250-foot steel towers, a radio operating building and quarters for the operators. Work on all of these has been actively prosecuted during the past year. For the emergency repair installation the filling of the site has been completed, the shop buildings are practically completed and are ready for the installation of machine tools and equipment; in the power plant all the equipment except two small alternating generating sets is ready for operation, and the latter are in process of erection. The water-distilling plant is 80 per cent installed and awaits only the replacement of certain parts broken in shipment to be completed. Distributing systems are about 75 per cent installed; frame buildings, including central office building, guardhouse, 6-bed dispensary, dock gear building, boiler house, latrine, washhouse, 8 sets married quarters, a bachelor mess for 24 civilian assistants, are 97.5 per cent completed. Work on the magazine installation, comprising a concrete-block magazine, a shell house of identical construction, a custodian's quarters and office building of frame construction, a timber wharf, railroad, etc., is about two-thirds completed. In the fuel-oil installation the 90,000-gallon gasoline tank is ready for use, two 2,500-ton oil tanks are in use, and the remaining tanks are under construction; fuel pump-house building is completed and pumps recently received under contract are being installed. At the radio station the steel for the two steel towers is delivered and being erected; the buildings are about 50 per cent complete; ground wiring, high-tension pole line from the central power plant, sewerage, water-supply line, etc., have been installed.

PUBLIC WORKS, BUREAU OF MEDICINE AND SURGERY.

Three large hospitals of the most modern construction were completed during the year at Portsmouth, N. H., Newport, R. I., and Chelsea, Mass., at a cost of about \$300,000 each. They are handsome brick buildings, with accommodations for about 135 patients each.

A power house and equipment for heating purposes is under contract for the Newport hospital, and plans for a similar structure and installation have been completed for Chelsea. Minor improvements were carried out at various other stations. Plans and specifications were prepared and the work advertised for a complete hospital plant at Pearl Harbor with a capacity of 100 beds, and a contract for a part of the work has been recently executed.

PUBLIC WORKS, MARINE CORPS.

Officers' quarters at Philadelphia, stable and grading at Puget Sound, and sump pit and sewage-ejecting plant at Norfolk were completed during the year. At Pearl Harbor the marine barracks and officers' quarters are nearing completion. Contract has lately been executed for marine barracks at Philadelphia and additional officers' quarters are being advertised for Puget Sound. Construction work completed or under way during the year aggregated over \$200,000, and work in view for the coming year is approximately \$323,000, not including work at Panama and marine barracks at Boston, where constructions have been suspended.

PUBLIC WORKS FOR THE BUREAU OF ORDNANCE.

Construction work is either underway or has been completed at 12 separate stations, aggregating over \$630,000. In addition, work in view aggregates over \$675,000.

RADIO STATIONS.

During the year minor improvements at the station at Arlington, Va., were in progress. At Guantanamo two steel towers 250 feet high and buildings are nearly completed. Three towers 600 feet high at Panama were placed under contract at the end of the year, and necessary buildings have been authorized.

Plans are in progress for high-power radio stations on the California coast, Hawaiian Islands, and the Philippines. At secondary stations the work of modernizing the plants has been authorized for Key West Fla.; Point Isabel, Tex.; navy yard, Washington, D. C.; Boston, Mass.; and Beaufort, S. C.

FUEL OIL AND GASOLINE STORAGE PLANTS.

The station at Guantanamo has been practically completed and work on the plant at Pearl Harbor is being actively prosecuted. Tank storage built, building, or authorized is as follows:

Station.	Fuel oil.		Gasoline.	
	Number of tanks.	Total storage.	Number of tanks.	Total storage.
		<i>Tons.</i>		<i>Gallons.</i>
Boston, Mass.....	1	7,000	1	90,000
Melville, R. I.....	2	5,000	1	90,000
Norfolk, Va.....	2	5,000	1	90,000
Charleston, S. C.....	2	5,000	1	90,000
Key West, Fla.....	2	5,000	1	90,000
Guantanamo, Cuba.....	7	30,000	1	90,000
Pearl Harbor.....	5	33,000	1	90,000

COAL-STORAGE PLANTS.

Work has been actively prosecuted during the year on a coaling station at Pearl Harbor with an ultimate capacity of 200,000 tons. An additional coaling tower and improvements to coaling plant at navy yard, Boston, is under advertisement.

FLOATING CRANES.

There have been constructed during the year two large floating cranes; one for the navy yard, Boston, which has recently been completed, tested, and accepted, and the other for the Naval Station, Pearl Harbor, which is essentially completed, although not yet tested. These cranes are identical, each having a capacity of 150 tons with an approximate reach over the end of the pontoon of 62 feet and an approximate lift from the deck of the pontoon of about 70 feet. They are electrically operated and designed to use current received through a shore connection or by means of generators driven by heavy oil engines installed on board. Storage batteries are provided of sufficient capacity to provide current for any ordinary single-hoisting operation without recourse to the navy yard supply or starting the generator on board. The cost of the Boston crane was about \$300,000 and the Pearl Harbor crane 10 per cent more.

REPORT OF OPERATIONS.

New constructions completed or under way under the supervision of the Bureau of Yards and Docks at the end of the fiscal year 1913 may be described as follows. In addition there were numerable small jobs carrying in the aggregate a large amount of money.

Annapolis, Md.—The work completed consisted of construction of crypt under the chapel for the body of John Paul Jones, underground electric distributing system, and earth mounds and grading at target range. The work on the crypt consumed practically the entire amount of the appropriation, which was \$75,000. The work at the target range was performed under contract at a cost of \$14,658.26. At the end of June the underground electric distribution system, estimated to cost \$60,000, was nearly completed.

Arlington, Va.—Work completed during the fiscal year consisted of the erection of steel wireless towers, wireless station buildings, installation of hot-water heating system in the buildings, grading, construction of roadway, and minor improvements. The entire cost of the work which was performed under the supervision of the Bureau of Yards and Docks amounted to \$197,312.90.

Boston, Mass.—The 150-ton floating crane purchased under the same contract as that calling for a similar crane for Pearl Harbor was completed about the end of the fiscal year at a cost of \$293,822. The gasoline-storage installation obtained by transfer of the gasoline-storage tank originally designed for the naval station, San Juan, P. R., was completed at a cost of \$8,885.30. The only work of importance at this yard, which was started but not finished during the fiscal year 1913, was the construction of one officer's quarters, the contract price for which is \$11,516; approximately 75 per cent of the work on this construction was completed June 30.

Charleston, S. C.—An additional fuel-oil tank with appurtenances was installed at this navy yard, the total cost being approximately \$11,000. The suction dredge constructed under contract No. 1544 was accepted toward the close of the fiscal year; contract price for the dredge was \$34,906.95, which will probably be reduced somewhat by reason of a penalty on account of long delay in completion of the work. The principal work remaining uncompleted June 30 is bathroom and lavatories for enlisted men, to cost \$4,000, and storehouse for oil to cost \$20,000.

Chelsea, Mass.—The new group of hospital buildings was practically completed June 30, 1913. The final contract price for these buildings was \$287,123.23. In addition an electric passenger elevator was installed at a cost of \$4,010.

Fort Lafayette, N. Y.—The placing of a concrete floor, etc., in a structure at this place was completed at a cost of \$5,300.

Fort Mifflin, Pa.—A magazine for segregated smokeless powder was constructed at a cost of \$3,000, and a building for re-forming plant at a cost of \$6,000. The installation of the electric-lighting system, including the necessary work for bringing power from the navy yard, Philadelphia, to cost about \$20,500, was the most important piece of work remaining uncompleted at this magazine. Minor improvements to the extent of about \$10,000 remained unfinished.

Island of Guam.—An ice plant and a sewer system, costing \$3,000 and \$15,000, respectively, were installed at this station. The wharf at Piti, to cost \$3,000, remains uncompleted. Work is necessarily slow because of the difficulty in securing material.

Guantanamo, Cuba.—The work being performed under the appropriation "Emergency repair installation," amounting to \$378,500, is nearing completion. Construction work, generally speaking, is estimated to be not less than 85 per cent completed. The most important and largest single items are boiler house, paint shop and deck-gear house, latrine, dispensary, administration building, officers' quarters, washhouse, warrant officers' quarters, power-plant equipment, distilling plant, ice plant, distributing system, etc. Under "Depots for coal" the fuel oil and gasoline installation, to cost in the aggregate about \$143,000, was well advanced at the close of the fiscal year. The installation of tanks under an old contract had been completed toward the close of the year, and the erection of five additional fuel-oil tanks was about 30 per cent advanced.

Under "Equipment of vessels" work at the radio station, consisting of steel towers, buildings, etc., the present estimated cost of which is about \$50,000, is expected to be completed about November 1, 1913. Construction work on the towers was about 60 per cent completed June 30, while work on the building was about 40 per cent completed.

Under various specific appropriations construction of a magazine building, shell house, one set of quarters and office building, wharf, and railroad connection at the naval magazine, to cost \$51,000, were well advanced.

Hingham, Mass.—Work in progress at the close of the fiscal year consisted of dredging a channel in Weymouth Back River, at an estimated cost of \$35,620, and construction of a magazine building at a cost of \$12,350.

Indianhead, Md.—A turntable, traverse table, and tracks at north battery were completed at Indianhead, the cost being \$14,500. A surveillance magazine was completed at a cost of \$1,500. Two dry houses for smokeless powder were completed at a cost of \$7,500. The uncompleted work consists of the construction by proving-ground force of one set of double quarters for commissioned officers; the appropriation available for this work is \$12,000. At the close of the fiscal year the work was 24 per cent completed, and it was estimated that all work would be finished by October 1, 1913.

Iona Island, N. Y.—The work here consisted of the construction of a shell house at a cost of \$20,730. The river wall was extended at a cost of \$4,887.60. Two magazine buildings were in course of construction at the close of the fiscal year, the estimated cost being \$30,000.

Key West, Fla.—An additional fuel-oil tank was installed at a cost of \$15,602.50, inclusive of tank, foundations, and connections. The largest piece of work completed was the extension of the quay wall, which had been in progress for some time; final cost was \$198,261.89. Very little work of any importance remained uncompleted at the close of the fiscal year. Such work as was in progress was in the nature of minor improvements not entailing a large expenditure of money.

Lake Denmark, N. J.—Magazine building proper, with hose house, water mains, fire hydrants, railroad switch, electric lights, watch system, telephones, extensions to air-pipe system, grading, etc., was the extent of the work at this place, the total cost being \$12,756.48. The improvements in progress include construction of a locomotive house, magazine building, water-pipe mains, and fire-boundary wall; entire cost, about \$26,000.

Mare Island, Cal.—The central power-plant building and equipment, including turbo-alternators, air compressors, boilers, stack, and auxiliary equipment, was completed at a cost of \$331,617.68. Railway construction on timber wharf at Dry Dock No. 2 was completed at a cost of \$10,000. A wharf and approach for magazine building and primer house were constructed at the naval magazine at a cost of \$11,000. The most important new work remaining uncompleted was the laying of concrete walks, street and road pavement, sewer pipe, drains, etc., to cost \$25,000. At the naval magazine a gunners' quarters and a magazine building are being constructed at a cost of \$13,450.

Newport, R. I.—The installation of an additional fuel-oil tank at Melville station cost, with foundations, piping, etc., \$13,148.27. Paving at the torpedo station cost \$10,000. Structural steelwork and radial brick chimney for the new power plant at the torpedo station were completed at a cost of \$12,422.55. A fresh-water supply pipe was installed at the torpedo station at a cost of \$5,899. The naval hospital buildings were nearing completion at the close of the year; final cost will be about \$285,000. The work on the new power plant at the torpedo station was well advanced so far as the building was concerned. A great deal of equipment, however, remained to be installed. The total cost of the power plant, including building and equipment, will be \$180,000. Important work in progress at the naval training station is: Additional water supply, cost \$12,625;

renewals and repairs to administration building, cost \$18,568; remodeling auditorium, cost \$8,568.

New York, N. Y.—The work completed during the fiscal year was: Dredging, \$154,880.39; installation of generator sets and panels, \$13,953; and extension of yard dispensary, \$4,500. Work uncompleted was construction of Piers E and F, to cost \$109,494.11; 50-ton locomotive jib crane, to cost \$47,950; paving around Dry Dock No. 4, to cost \$32,631.20; and paving coaling pier, to cost \$12,920.

Norfolk, Va.—An additional fuel-oil tank was installed at St. Helena, costing, including foundations, connections, etc., \$25,000. Dry-dock pumping equipment was installed for Dry Docks Nos. 1 and 2 at a cost of \$24,398.06. A heating system for building No. 23 was completed at a cost of \$4,493. A shell house and magazine building was completed at the naval magazine at a cost of \$31,670.29. The construction of a sea wall is in progress at this place, the cost to be \$86,790.20. Other minor constructions are in progress. At the naval magazine, St. Juliens Creek, two magazine buildings, to cost \$26,422, are being constructed, as well as a storehouse for high explosives, to cost \$1,300, and two sets of quarters for magazine attendants, to cost \$7,000.

Pearl Harbor, Hawaii.—The sewer system for this station was completed at a cost of \$29,512. Two locomotive cranes were purchased and delivered at a cost of \$18,900. A pump pit and circulating loop were constructed at a cost of \$15,000. A great deal of large and important construction work is nearing completion, including floating crane, \$334,522; grading, \$9,450; oiled macadam roads, \$30,000; yard water system, \$62,000; administration building, \$48,986.79; six officers' quarters, \$65,255; power-plant equipment, about \$52,000 (not including boilers); boilers and accessories for power plant, \$149,209.41; erection of steel framing, door and window frames, roofing, and other accessories for seven industrial buildings, \$59,514.70; electrical work in seven industrial buildings, \$48,000; construction of dry dock (work suspended), contract price \$3,178,621.61; dry-dock pumping equipment, \$128,254.10; dry-dock caisson, \$133,923.93; dredging for quay wall, \$69,900; construction of quay wall, \$81,753.88; street paving, \$25,000; light and electric distribution system, \$30,000; general storehouse, \$85,058; fuel-oil and gasoline storage plant, \$131,000; coaling plant, work in hand, \$486,090; marine barracks and officers' quarters, \$172,614.70. At the naval magazine, Kuahua, a dock is being constructed to cost \$25,000; five magazine buildings are being constructed at a cost of \$79,600; railroad track is in progress of construction at \$7,500; electrical power is being installed, to cost \$5,500; and a fresh-water system is being installed at a cost of \$10,000.

Philadelphia, Pa.—The extension of the retaining wall about the reserve basin at this yard was completed at a cost of \$50,000. The sanitation system, consisting of toilet buildings adjacent to the reserve basin, was completed at a cost of \$73,500. Dredging the Delaware River water front was completed at a cost of \$108,039.40. Marine officers' quarters were constructed at a cost of \$55,989.24. Dredging in and at entrance of reserve basin, estimated to cost \$285,440, remains uncompleted. Construction of Pier No. 5, to cost \$122,985.63, was unfinished at the close of the fiscal year. Work was

started on the new marine barracks, which are under contract at a price of \$160,549.

Portsmouth, N. H.—A tool house for naval prison was completed at a cost of \$2,000. An electric elevator was installed at the naval hospital at a cost of \$3,765. The naval hospital buildings at this place are nearing completion; final cost will be \$300,192.64. A combined railway and highway bridge was contracted for and construction started; cost will be \$93,619. The quay wall, to cost \$95,695.46, was still progressing, and it is estimated that the work will be finally completed about December 1, 1913. A quarters is being constructed for the commanding officer, naval prison, at a cost of \$11,448.

Puget Sound, Wash.—The most important work completed at this navy yard was Dry Dock No. 2, which, with all appurtenances, cost \$2,158,047.23; of this sum the dry dock proper cost \$1,898,567.93. The general foundry building was completed, costing \$161,303.06. Water-closets for yard workmen cost \$8,700. The new garbage crematory was completed at a cost of \$6,000. Interior finish, kitchen equipment, and electric passenger elevator in naval hospital cost \$14,956.08. Construction of a frame stable at the marine barracks and grading ground adjacent to the marine barracks cost \$14,144.87. A magazine building and fixed ammunition storehouse at the naval magazine cost \$25,497.08. An office building and laboratory at the naval magazine cost \$8,893. Work was started on the construction of Pier No. 4, to cost \$166,331.66; dredging and construction of Pier No. 5, to cost \$77,534, was well advanced. Renewals and improvements to Pier No. 6, to cost \$25,000, were well advanced. Two officers' quarters were in progress of construction, at a cost of \$16,292.10. Two locomotive cranes were contracted for, at a cost of \$18,400. At the naval magazine the construction of a quarters for the inspector of ordnance, to cost \$8,650, was over half completed at the close of the fiscal year.

San Francisco, Cal.—The only work completed at this training station was the garbage crematory, the cost being \$1,500.

Washington, D. C.—The extent of completed work at this yard was the construction of storage for motor vehicles at a cost of \$3,990.65. Work on the new foundry building was well advanced at the close of the fiscal year, excepting the heating, lighting, and plumbing systems, which have been contracted for, but work not started. Delay in completing the steel work for the building has delayed this work. The entire cost of the new foundry will probably equal the amount of the appropriation, which is \$200,000. Construction of new quay wall, to cost \$47,162, was over half completed.

"MAINTENANCE" AND "REPAIRS AND PRESERVATION."

Appropriations for the fiscal year 1913 were \$1,500,000 under "Maintenance," and \$800,000 under "Repairs and preservation." The amounts appropriated have been expended principally upon general maintenance and repair of Government property at various yards and stations; the funds have also been utilized for numerous minor alterations and extensions which have been necessary from time to time for emergency needs, but for which specific funds could not be provided in view of the unforeseen character of the work. These appropriations have remained at the same figures for several years past, whereas the value of public works of the Navy have in-

creased at least \$20,000,000 during that time. The bureau is very much embarrassed by the insufficiency of the amounts provided under these appropriations for the proper upkeep of the Government property.

It is earnestly recommended that substantial increases be made under the appropriations in order that the navy yards and stations may be kept in an efficient working condition. Failure to repair such property as occasion demands will inevitably result in rapid deterioration and consequent larger final expenditures.

CONTINGENT.

The appropriation for the fiscal year 1913 was \$30,000. This has been expended for a large number of urgent items for which funds could not be estimated in advance. The bureau believes that the scope of the appropriation should be enlarged and the amount increased to provide for those minor items of public works whose need can not be foreseen, or which individually are not of sufficient magnitude to present as separate items in the annual estimates.

ADDITIONAL DRY DOCKS.

Since 1898 there have been nine new dry docks (exclusive of floating docks) authorized, eight of which are now completed. Those constructed at Boston, Portsmouth, Philadelphia, Mare Island, and Charleston were practically outgrown before their completion, due to the very abnormal developments in battleship design during the period required for their construction, and are now inadequate to receive a number of the largest battleships. At present there are but three dry docks available having dimensions sufficient to receive our largest battleships, namely, the docks at New York, Norfolk, and Puget Sound.

Dry docks are the most important feature of a navy yard. All other accessories, including the buildings, machine-tool equipment, stores, transportation facilities, berthing space, and personnel are really only accessory to the dry docks.

Due to the intermittent use of the dry docks and the widely varying demands which the docks make upon the above accessories it appears, generally speaking, that the navy yard accessories have an aggregate capacity far in excess of any demands which can be made by a single dock. In other words, several docks are essential for the most economical and most efficient operation of a navy yard. The necessity of having at least two docks of maximum dimensions in each of the principal yards is an urgent military requirement to meet the possibility that a single dock may have to be indefinitely withdrawn from routine service by the unexpected arrival of a vessel in distress. This latter condition has been illustrated by the demands of the battleship *Arkansas* upon dry dock No. 4 at New York, which involved the uninterrupted use of the dock for a protracted period and thereby prevented the carrying out of routine schedules previously arranged. The desirability of having several dry docks at one yard can not be questioned from a military point of view. For these reasons the bureau considers that it is extremely important that each yard which is equipped with one large dry dock shall also be provided with at least a second dock of maximum dimensions.

CORPS OF CIVIL ENGINEERS, U. S. NAVY.

Attention is invited to the unfortunate condition of the assistant civil engineers of the Navy as regards their rank, and as a consequence, their pay. The act of March 3, 1909, provided for 12 assistant civil engineers, 6 with the rank of lieutenant, junior grade, and 6 with the rank of ensign. Increased rank can only come by promotion to the full grade of civil engineer as vacancies occur in that grade.

Of the last 18 assistant civil engineers 13 were appointed from the Naval Academy. Graduates of the Naval Academy detailed to this corps are selected after one to two years' sea service, and are commissioned after a two years' course of study at a technical school. Such men, therefore, receive their commissions as assistant civil engineers with the rank of ensign three to four years after graduation, at a time when their classmates in the line have been promoted to lieutenant, junior grade, the law providing that ensigns in the line shall be promoted to junior lieutenant after three years' service as ensigns. Not only does the assistant civil engineer start out with lower rank than his classmates, but he retains this rank irrespective of the subsequent promotion of classmates of the same standing in the line (Corps of Naval Constructors). In the latter corps the assistants are appointed with rank of junior lieutenant and are promoted subsequently with their running mate in the line. The assistant civil engineer is not promoted in this manner until after he reaches the full grade in the Corps of Civil Engineers.

The injustice and hardship which the assistant civil engineers have to undergo as compared with their brother officers is well illustrated by an average case, a graduate from the class of 1908. He was commissioned an assistant civil engineer with rank of ensign June, 1911, and under normal conditions will retain the rank of ensign until 1920. This officer will be passed in rank by every officer in the active list below him to-day. Further, every graduate of the classes of 1914, 1915, and 1916 now at the Naval Academy will pass him. Not only these, but every individual making up the classes of 1917, 1918, and 1919 will be appointed, complete their four years' course, will graduate, and will rank with this officer, who will have served 16 years in the Navy. His running mate in the line was commissioned lieutenant, junior grade, in June, 1913. The case of those assistants appointed from civil life is even more disheartening, as these officers when appointed were considerably older than officers appointed from graduates of the Naval Academy.

The bureau believes that it is imperative to provide immediate relief for these officers, not only in justice to the officers, but also to promote the efficiency of the corps and for the general good of the service. It is urged that the provisions of the law be amended to provide for the promotion of assistant civil engineers with their running mates in the line, and that the department endeavor to have favorable action taken at the next session of Congress. Such legislation will in no way interfere with the consideration of a general personnel bill, and its early enactment is believed to be only simple justice to the officers involved.

H. R. STANFORD.

REPORT OF CHIEF OF THE BUREAU OF NAVIGATION.

DEPARTMENT OF THE NAVY,
BUREAU OF NAVIGATION,
Washington, D. C., October 4, 1913.

To: The Secretary of the Navy.

Rear Admiral Philip Andrews, United States Navy, was Chief of the Bureau of Navigation until March 26, 1913, when he was relieved by the undersigned.

The following statement of the work of the bureau, together with certain recommendations, is submitted:

NAVY RELIEF IN STORM DISTRICT.

The Navy rendered prompt and efficient service to the people of the Ohio and Mississippi Valleys during the depredations caused by the floods the latter part of March. Three medical officers, four pay officers, a pay clerk, a marine officer, and a number of enlisted men of the commissary branch and the Hospital Corps were promptly dispatched to the scene, where they reported to the Secretary of War for duty. Portions of the detachment were detailed on board steamers which were sent with supplies and medical stores up the Ohio River. The naval force was distributed among the following cities: Cincinnati, Louisville, Marietta, Dayton, Maysville, and the surrounding towns, where clothing and provisions were furnished stricken inhabitants and medical attention given those needing it. Special efforts were made by the medical authorities to combat the ravages of typhoid and other epidemics incident to the flood.

From the naval training station, Great Lakes, Ill., a detachment consisting of 42 officers and men with 6 boats proceeded to Logansport, Ind., where efficient service was rendered in saving people who had been driven from their homes by the high water. Four carloads of provisions and clothing were gotten through to Cincinnati before communications were cut off.

Some of the pay officers of the detachment were dispatched to cities along the lower Mississippi River, where they performed valuable service in distributing supplies as the floods passed down the river.

The Navy recruiting service was prompt to render assistance in those cities of the Middle West which were stricken by flood and tornado. The recruiting parties in Omaha, Indianapolis, Cincinnati, Columbus, Dayton, Louisville, and Cleveland were among the first to offer their aid and rendered excellent service in rescuing lives, guarding property, and in restoring sanitation. Recruiting was practically suspended in the various sections for about a week. Recruiting officers and enlisted men cooperated with the officers and detachments especially detailed by the department for relief work. In the Indianapolis district the personnel of the publicity bureau, nearly 40 men, devoted their entire time for about five days guarding bridges, rescuing lives, and doing police work. The Cleveland party, although outside the affected zone, at once proceeded to Dayton and reported to the State military officials, where they remained as long as their services were needed. No loss of lives and no property loss of con-

sequence was sustained by the recruiting service. The following testimonial was received by the recruiting officer at Indianapolis from the board of public safety of the city of Indianapolis:

Your devotion to the lives of others, your splendid behavior, your exemplary bravery, and your heroic service to your city during the flood compel the admiration of men. The board of public safety takes this opportunity to commend you for this service.

HISTORICAL SHIPS.

It is recommended that the frigate *Constellation*, now at the naval training station, Newport, R. I., or the *Constitution*, which is now at the navy yard, Boston, Mass., and which was repaired in accordance with an act of Congress approved June 29, 1906, providing \$100,000 to restore her as far as practicable to her original condition, be brought to Washington and anchored in the Potomac River just off Potomac Park. Should the *Constellation* or the *Constitution* be brought to the National Capital and made accessible to visitors who are continually arriving from all parts of the country, it is believed that it would create a greater national interest in the new Navy and be a means of instilling a greater patriotism in the minds of the younger generation.

MEDALS OF HONOR.

There is no provision of law at the present time which permits the award of medals of honor to officers of the Navy, and it is recommended that legislation be enacted which will authorize the award of medals of honor to officers as well as enlisted men of the Navy for extraordinary gallantry and intrepidity in action against an enemy above and beyond the call of duty, and at the risk of life. It is also recommended that a medal be authorized for both officers and enlisted men of the Navy to be known as a distinguished-service medal for those who distinguish themselves by exceptionally meritorious service to the Government, in duty of great responsibility, or by extraordinary heroism in the line of their profession. It will be noted that the distinguished-service medal does not require that the service be performed in action against an enemy. Provision should also be made for the award of a bar for those who distinguish themselves in the manner indicated above subsequent to an award to the same individual of a medal of honor or a distinguished-service medal.

POSTGRADUATE DEPARTMENT AT THE NAVAL ACADEMY.

The postgraduate department at the Naval Academy, established last year, has just completed its first academic year. The following special courses have been instituted: Mechanical engineering, electrical engineering, radio, and ordnance. The instruction in these courses has been given by instructors from Harvard, Columbia, Michigan, and Johns Hopkins Universities, in addition to those detailed from the regular academic staff. The course also includes a series of lectures, which have been given by men distinguished in scientific and technical lines. These lectures have been opened to the attendance of all officers on duty at the Naval Academy, and many of the lectures have been reduced to manuscript and published for distribution to the service. The work of the department is not stopped during the summer months, the students being sent to the experiment station at the

navy yard, New York, and to certain large industrial plants; the students so detailed being under the personal direction of an instructor. Arrangements have been made whereby the second year's course may be continued at Columbia University for those specializing in engineering, while the naval constructors will go to the Massachusetts Institute of Technology, and the ordnance students will pursue special courses at the naval proving grounds and at large steel plants where armor plate, guns, and projectiles are manufactured.

INDEX OF RECORD OF OFFICERS.

For quick reference in selecting officers for duties for which they are especially qualified by education and experience, the bureau is putting into operation a very concise and complete card record of each officer's service.

Heretofore it has been necessary in order to obtain an officer's record to look over a great number of reports on fitness, some of which were filed in this bureau and some in the Judge Advocate General's office.

By a very ingenious system, invented by a young officer of the bureau, these records are now condensed on cards 9 by 11 $\frac{3}{4}$ inches. All the different duties an officer has performed and his efficiency in this performance as shown by his reports on fitness are given.

A similar card filed with the first shows diagrammatically an officer's sea and shore duty, and where and when it was performed.

These records have already proved most valuable in selecting officers for duty, but owing to the shortage of officers greater weight will in many instances have to be given to availability than to special qualifications.

EXAMINATION OF OFFICERS.

The custom of ordering officers on the Atlantic coast and in the Atlantic Fleet before the board at Washington for examination for promotion has been discontinued, as it not only took the officers away from their stations for an undue length of time, but entailed considerable expense for travel. Except in special cases, the examinations are now conducted by a supervisory board at the stations where the officers are on duty, the questions being prepared and marked by the examining board at Washington.

THE OFFICERS' LIST.

The condition now confronting the commissioned line officers of the Navy is deserving of the serious consideration of Congress. An inspection of the Navy list will show that there are now 1,000 officers of the grades of lieutenant (junior grade) and ensign, compared with 750 officers above those grades. If junior lieutenants are promoted at the rate of 40 each year, as provided for by present law, the junior ensign now on the list will reach the grade of lieutenant at an age at which officers are now being promoted to captain. This condition is growing worse year by year, and if not remedied by Congress the time will eventually come when practically all the working officers in the service will be junior lieutenants and ensigns. The grades above them will be only stepping stones over which an officer is rushed to the retired list, without having given but little service in the

higher grades. It is evident that the line of the Navy urgently needs a redistribution of officers in the various grades, but such redistribution should not be made at once, but should gradually become effective, extending over a period of years. Every year's delay in the organization of the line but postpones the time when action must be increasingly drastic, as well as more expensive to the Government. By acts governing the appointment of midshipmen to the Naval Academy and permitting a limited number of enlisted men to be commissioned each year Congress has already provided for the number of commissioned officers of the line. This number will reach a maximum in 1923, when there will be approximately 2,700 officers on the list. A careful estimate made of the number of officers required for the fighting ships already provided for shows that the above number is not sufficient to man the fighting ships in time of war, to say nothing of the auxiliaries required.

Owing to the contemplated hearings to be held by the Naval Committee of the House of Representatives on the subject of personnel, the bureau refrains from making any recommendation therefor, but is prepared to do so at the proper time.

PAYMASTER'S CLERKS.

It is recommended that a warrant corps of pay clerks be established, and that all appointments thereto be made from among the enlisted men of the Navy who shall have served, prior to appointment, at least three years as enlisted men, two years of which shall have been on board a seagoing ship, and who must hold the rating of chief petty officer at the time of examination for appointment. It is also recommended that no pay clerk be appointed whose age is such that his previous naval service added to the time which would elapse between date of appointment and date of retirement for age gives a total of less than 30 years. It is further recommended that pay clerks be made eligible for promotion to chief pay clerks upon the completion of six years' service from date of appointment, in the same manner as other warrant officers of the Navy are promoted.

At present a paymaster's clerk is appointed on nomination of a paymaster, for a specific duty on a certain ship or at a certain station. If the pay officer is detached, the clerk's appointment has to be revoked and he must be ordered to his home. The clerk may or may not be reappointed, but in any case a change of pay officers usually entails a change of clerks with considerable cost to the Government in mileage.

Should a permanent corps be established it will provide a line of advancement for chief petty officers of the Navy, and especially for the yeoman class which is now not eligible to warrant rank.

NAVAL ACADEMY ENTRANCE EXAMINATIONS.

The bureau is preparing a circular letter transmitting a copy of the pamphlet containing sample examination questions for entrance to the Naval Academy, to the principals of high schools throughout the United States, requesting an expression of their views with reference to the questions now being asked the candidates for admission to the academy, and if the examination is such that the ordinary high-school student should be capable of passing it.

PRELIMINARY EXAMINATION OF CANDIDATES FOR MIDSHIPMEN.

In order to aid Members of Congress in every possible way to ascertain before their candidates for midshipmen undergo the mental examination as to the probability of their being able to pass the physical examination, orders have been issued to all naval and recruiting stations having medical officers attached thereto, to physically examine any candidate that may present himself with a letter signed by a Member of Congress requesting him to report for such examination.

The examination is to be an unofficial one for the purpose only of advising the candidate and Member of Congress concerned as to his physical condition at the time of examination. By this means it is expected to establish valid causes for the rejection of the candidate, if such exist, rather than to be conclusive as to his acceptance by the medical board at the Naval Academy, by which all must be examined before entering the academy; and it may bring to light defects existing at the time of the suggested examination which could probably be removed or cured before the candidate would be required to present himself before the medical board at the Naval Academy.

PENSIONS OF INMATES OF NAVAL HOMES.

The present law requiring that pensions of inmates of naval homes be turned in for the benefit of the Navy pension fund is not equitable. Legislation is desired to provide that the pensions of beneficiaries of a naval home shall be disposed of in the same manner as prescribed for inmates of the soldiers' home, as provided for in section 4 of the act approved March 3, 1883, under such regulations as the Secretary of the Navy may prescribe, except that in the case of death of any beneficiary leaving no heirs at law or next of kin any pension due him and remaining in the hands of the governor of the home shall escheat to the naval pension fund.

Under the present law men sent to the naval home must forfeit their pensions, with the result that in cases where the families have relied upon this pension for support they become destitute. Deserving men no longer able to earn money must choose between the alternative of going into the naval home and allowing their families to suffer or remain out of the institution provided for them in order that they may retain for themselves and their families the pension. Provision should be made so that the pension of an inmate of a naval home can be paid in the discretion of the Secretary to the dependent family.

DEMANDS UPON THE ENLISTED PERSONNEL.

The Atlantic Fleet has been kept to its quota of 21 battleships in full commission. This, together with the Atlantic and Pacific Reserve Fleets and the placing of additional ships in commission, has made unusual demands on the enlisted personnel. These demands, due to various causes, have resulted in making the active and reserve fleets short from 10 to 15 per cent of their allowed complements.

The records of past years show that from 2,000 to 3,000 men have been on general detail on the various receiving ships available for service in case of emergency and to fill vacancies that normally occur on board cruising vessels. However, last year and this year the

number has been considerably reduced, there seldom being as many as 500 men altogether available on all receiving ships, so that when urgent need for putting ships in commission arose it was necessary to take men from vessels of the active fleet to man these vessels.

TRAINING OF ENLISTED PERSONNEL.

While 3,500 is the authorized allowance of apprentice seamen, this number has not been approached during this year, the average number at all training stations being approximately 2,500, the largest number having been trained at the Newport Training Station and the least number at the Great Lakes Training Station. While the facilities at the latter station are excellent, it has been necessary to restrict the number of recruits sent there to the group of recruiting stations situated near Chicago, because of the cost of double transportation involved.

The demands made on the personnel have been heavy, due to additional ships being placed in active commission; these have been met, and the reports concerning the character of men furnished reflect credit on instruction received at the training stations.

A system of physical training, based on the Swedish system and modified to meet the conditions, has been adopted and has resulted in the most beneficial results. Marked physical development and increased weight during the period at the station has resulted in the average recruit. Special attention has been devoted to instruction in swimming, so that practically all men sent to the fleet are now able to swim for at least a short distance.

Schools for the instruction of all apprentice seamen in the elementary mathematical and English studies have been established at the training station, Newport, R. I., the instructors being officers detailed from the ships in overhaul. While the system has not been established sufficiently long to observe results, it is reported that great interest and attention is given by those under instruction. Surprising statistics taken before the inauguration of this instruction showed the high character of men recruited for the service. Out of 632 apprentice seamen it was found that 108 had entered college or the high school, 370 had completed the seventh and eighth grades, and but 10 who had not completed the first three grades of school.

In addition, the training of apprentice seamen who show aptitude for instruction as signalmen has also been introduced at the various training stations, and it is hoped that sufficient men will qualify as signalmen in order to keep the fleet supplied in this respect.

The following table shows the number of apprentice seamen who were supplied the fleet as ordinary seamen and coal passers during the year, as well as the total number remaining under instruction:

	Transferred.		Remaining under instruction.
	Ordinary seamen.	Coal passers.	
Newport Training Station.....	2, 774	613	1, 310
Norfolk Training Station.....	1, 006	209	580
Great Lakes Training Station.....	965	137	413
San Francisco Training Station.....	1, 110	409	418
	5, 855	1, 363	2, 721

SCHOOLS.

The musicians' classes at Norfolk, Newport, and San Francisco have with some difficulty supplied the service with musicians, the largest number under instruction being at Norfolk, where the class has at times contained as many as a hundred.

The commissary schools at Newport and the San Francisco training station have furnished proficient commissary stewards, cooks, and bakers. Instruction in the duties of commissary stewards has been given ships' cooks to enable them to perform such duty in smaller vessels or upon occasion of a vacancy or absence of a commissary steward, on board the larger ships. Men from these schools have also assisted at expositions where the Navy had an exhibit of a ship's galley on board ship.

The artificers' class at Norfolk has afforded possibility of advancement in rating to men who have shown aptitude for mechanical work and special training of men enlisted in the mechanical branches.

The machinists' mates school at Charleston has completed its first year since its establishment and graduated its fourth class on August 1. All men finishing the course are rated machinist's mate (first or second class), except in case of the few who do not qualify, and are placed on probation on shipboard to prove their qualification for rating. The reports from the service regarding the men received from this class are most gratifying. The course of 16 months is divided into four periods, with instruction as follows in each:

In the first class the course includes chipping and filing (an exercise in which male and female blocks are fitted accurately by hand), drilling and tapping exercises, pipe fitting and nomenclature, and the rudiments of copper and tin smithing, brazing, babbitting, composition of solders, and arithmetic (one hour a day and one and one-half hours at night).

The second period consists of various exercises on lathes, shapers, and planers, the exercise being so chosen that a complete knowledge of each machine is obtained; a course on the model engines, in which each engine is taken completely apart, the name of each part learned, then put back together, adjusted, and run. The men in this class attend lectures at night, the lectures being confined to lathe, shaper, and planer work, with arithmetical problems.

In the third class the men are assigned to duty on the boats of the reserve torpedo group. The boats to which they are assigned are put in shape and run frequently. At the end of this period the vessel is laid in reserve, the machinery being disabled as per regulations. These men attend lectures at night in which the ordinary derangements of machinery on board ship and their remedies are discussed.

In the fourth class the men are given an advanced course in lathe, milling machinery, and boring mill work. Details from this class go to the blacksmith shop, gasoline engines, submarine boats attached to the reserve torpedo group, and also men from this class are sent to witness especially interesting work in the yard shop or on board ships in the yard. These men are lectured on the lines of their course, and during the last month are taught something of valve setting and the distribution of power by independent cut-offs. A repair gang, two weeks' detail, composed of men of the fourth class, take up all

repair work of the shop, broken machines, emergency work on vessels of the reserve torpedo group, and demands of special character.

There is an average of 175 men under instruction in this class.

Electricians for the service are produced from the two schools at Mare Island and New York, the latter being much the larger. The equipment of the New York school is excellent, and electricians are graduated to the service well equipped to take up the practical duties on shipboard. Men who show an aptitude for radio work are selected early in the course for this instruction alone and are not required to take the full course in general electricity. This has resulted in a higher grade of radio men developed for the service. Encouragement has been given to signalmen from the fleet to be sent to the schools for instruction in radio work. Authorization has also been given to the training stations to send in limited numbers to the school such apprentice seamen as show an aptitude for radio instruction, as it has been frequently found that good telegraph operators have enlisted as apprentice seamen.

The course of the seamen gunner classes at Newport, R. I., and Washington, D. C., have been added to and extended to meet the change of conditions. The plan has been adopted of giving the five highest graduates of each school the benefit of a course at the other schools. It is believed that in this way the best men will be developed to later go up to the grade of gunner if found qualified by examination.

RATING OF PRINTER.

The bureau desires to invite attention to the rating of printer in the service. The duties of a printer on board ship are very arduous, and the work required calls for men of high qualifications.

The bureau recommends that Congress be requested to create the rating of chief printer with the same pay as that of chief yeoman. This would give an opportunity for advancement to a deserving class of men and operate to retain in the service the most desirable of them.

GRADED RETIREMENT OF ENLISTED MEN.

In the opinion of the bureau this subject is worthy of careful consideration.

Under present law enlisted men will be retired upon their own application after 30 years' service.

Experience has shown that only a few men remain long enough to benefit by this law. Its practical operation, therefore, is not as an inducement to retain men in the service, but rather as a reward for men who remain for various reasons of their own.

It is believed that a graded retirement law based on periods of 12, 16, 20, and 24 years would be a great inducement to many desirable men, who would otherwise go into civil life, to remain at least long enough to give the country the benefit of their education, training, and experience. Those retired, however, should be regarded as a reserve subject to call in time of war, and at intervals for periods of drill on board ship, in order that they might keep in touch with progress in the naval service.

A reserve of such experienced men as a nucleus would be a potent factor in the formation and instruction of a national naval reserve, of which the Navy is very much in need.

CHECKAGE OF PAY OF ENLISTED MEN.

The continued efforts to bring relief to the large number of enlisted men who were checked pay which they had already received under the presumption that they were citizens of the United States, as a result of the comptroller's decision, in which it was held that it was incumbent upon the pay officers to satisfy themselves as to the sufficiency of the evidence of citizenship presented, have been attended with partial success.

The Comptroller of the Treasury has advised the department that if orders are issued to pay officers to repay to enlisted men all amounts that heretofore have been collected from or checked against their pay on account of inability to prove citizenship under General Order No. 34, such men having been enlisted or reenlisted by officers of the Navy as American citizens, and that pay officers shall make no further payments for past, present, or future services under that order to those who can not furnish proper proof of citizenship, such order will be acquiesced in by the accounting officers of the Treasury, and pay officers will not be held responsible for this class of payments heretofore made for services rendered prior to July 1, 1913.

NATURALIZATION OF NAVY ALIENS.

Numerous cases have been brought to light in the past year, when enlisted men were called upon to produce evidence of citizenship in connection with the additional pay for reenlistment, where men of foreign birth had been in the service a great many years who believed that they were citizens by reason of such long and faithful service, but who actually had never been naturalized. Some did not know that it was necessary to apply for citizenship papers, believing their service in the Navy sufficient; to others the opportunity had never presented itself. It is urgently recommended that legislation be enacted which will make more simple the naturalization of enlisted men of the Navy. The bureau considers that an honorable discharge from one completed term of enlistment in the Navy should be sufficient to permit the granting of citizenship papers upon application without previous declaration of intention and without requirement as to residence.

THE RECRUITING SERVICE.

Recruiting for the Navy during the past fiscal year was not as satisfactory as in preceding years until the month of June, during which there was an unprecedented number of enlistments.

Authority was issued by the bureau to vessels in home waters having on board a commissioned line officer and a commissioned medical officer, and to torpedo vessels when in company with vessels having such officers on board, to enlist qualified men on board in ratings which were open to general enlistments. Under these instructions men enlisting as apprentice seamen will be retained on board ship under instruction instead of being sent to a training station. These instructions were issued too late for the bureau to note the results in this report, but it is believed that a number of recruits can be thus obtained at practically no cost to the Government.

The circular-letter system was still further perfected during the year, the work being conducted at two publicity bureaus—New York and Indianapolis. The results obtained were satisfactory. Other advertising methods used were: Classified advertisements in the "help wanted" columns of selected newspapers, display space in magazines, distribution of booklets, bill posting, small posters for post offices, etc.

All recruits are interrogated as to the methods which prompted them to enlist, the advertising methods and media seen by them, and the influence such advertising had upon them, etc. The answers to these questions are forwarded to the bureau from all recruiting stations at intervals and tabulated. The combined answers have contained a great deal of valuable information as a guide in placing advertising, preparation of copy, etc. A recent tabulation showed that the greatest influence in enlistments was the desire to see the world and travel, 876 men giving this as their reason for joining the Navy. In view of this fact, it is predicted that enlistments will materially increase between now and the approaching cruise of the battleship fleet to the Mediterranean. The next highest number of answers was the recommendation of relatives or friends in the Navy, 748 giving that as their reason. The latter figures are very gratifying, showing that the men in the service as a whole are contented and are willing to voluntarily recommend the Navy to their friends at home. Five hundred and fifteen men joined with a desire to learn a trade; 481 to better themselves. Of the entire 5,381, only 318 stated they were out of work.

The number of recruits obtained is in proportion to the amount of publicity given and to the number of recruiting stations maintained. With adequate funds for advertising and for maintaining a sufficient number of recruiting stations, the bureau believes there would be no difficulty in keeping up to the full quota of enlisted men allowed by law, of which the Navy was 2,500 short at the end of the fiscal year.

TRANSPORTATION OF ENLISTED MEN.

There are two methods of securing the cheapest practicable transportation: First, by securing reduced rates from the railroads, and, second, by taking advantage of the longest land-grant routes.

As the military branches are exempt from the laws governing transportation rates, the railroads may grant reduced rates between the different navy yards and stations. It was originally the practice for a few of the railroads to grant rates that were a considerable reduction over the commercial tariffs. The passage of the present interstate-commerce act, with amendments thereto, and also the numerous State laws governing transportation, however, have forced a readjustment of rate conditions as affecting military transportation as well as commercial business. It is now the custom for practically all lines to grant the bureau a substantial reduction over the commercial fare. This substantial reduction over all lines practically balances the considerable reduction received over a few lines, so that the cost under contract rates has remained practically the same.

The bureau has effected an estimated saving, however, of \$10,000 by taking advantage of the longest land-grant routes. This has been particularly true in the transfer of men to and from the west coast

by way of Portland, Oreg. Because of the grants of land received by the Southern Pacific and Northern Pacific Railway Co's, the cost of transferring enlisted men via this route is approximately \$10 less than via Omaha, Kansas City, or one of the more direct routes. Because the Army was the principal purchaser of transportation in the early days in the territory traversed by the land-grant railroads, the other military branches were guided by the action of the War Department in so far as land-grant routes and rates were concerned. The establishment of the naval training station on the Great Lakes, however, the development of the recruiting service in the territory west of the Mississippi River, and the increase in importance of the west coast as a naval base have required the bureau to make a study of land-grant railroads; and it was found that by making transfers with regard to our own needs and not following the precedents a saving could be effected.

During the fiscal year 1913 the bureau cooperated with the Quartermaster General of the War Department, the officer in charge of the Quartermaster's Department of the United States Marine Corps, and the lines in the Transcontinental Passenger Association in the preparation of a tariff showing military rates between points in which the War Department, Navy Department, and United States Marine Corps were interested. This book has been of value, and it is the intention to have it gradually cover the entire United States.

NAVAL AUXILIARY SERVICE.

The conditions of this service during the past year, so far as economic conditions and the personnel are concerned, has been very satisfactory. The colliers have been kept constantly in service supplying the fleet and shore stations with fuel. While considerable difficulty has been experienced in the past in coaling vessels of the fleet, owing to lack of experienced men in handling winches, it is believed that since the establishment of the rating of winchman that this unsatisfactory condition will be greatly improved.

The present practice of promoting deserving officers already employed in the service to the next higher grades whenever vacancies occur instead of appointing men from civil life to fill such vacancies, it is believed, has, to a great degree, been the cause of the increased efficiency of these officers in their duties aboard ship.

RADIOTELEGRAPHY.

The act of Congress approved August 13, 1912, effective December 13, 1912, contained a provision that the head of the Government department having control of coast radio stations should as far as is consistent with the transaction of governmental business arrange for the transmission and receipt of commercial radiograms under the provisions of the Berlin convention and future international conventions or treaties to which the United States may be a party, at Arlington, Va.; Key West, Fla.; San Juan, P. R.; North Head and Tatoosh Island, Wash.; San Diego, Cal.; and those established or which may be established in Alaska and in the Canal Zone. Furthermore, at such stations and wherever and whenever shore stations open for general public business between the coast and vessels at sea under

the provision of the Berlin convention and future international conventions and treaties to which the United States may be a party shall not be so established as to insure a constant service day and night without interruption, and in all localities wherever or whenever such service shall not be maintained by a commercial shore station within 100 nautical miles of a naval radio station, the Secretary of the Navy is required, so far as is consistent with the transaction of governmental business, to open naval radio stations to general public business.

Departmental General Order No. 240 of November 9, 1912, established the Office of Superintendent of Radio Service under the Bureau of Navigation, with office at the radio station, Arlington, Va. This office is charged with the preparation of regulations and issue of detailed instructions for the operation of stations in accordance with military efficiency, international agreements in force, and the laws affecting the operation of naval radio stations, including issue of accounting and operating forms, auditing commercial accounts, traffic agreements, and accounting with commercial and other Governmental managements involved.

In accordance with the provisions of the act of August 13, 1912, referred to, the following coast radio stations are now open for the handling of commercial business:

Charleston, S. C.
St. Augustine, Fla.
Jupiter, Fla.
Key West, Fla.
Pensacola, Fla.
San Juan, P. R.
Guantanamo Bay, Cuba.
Colon, Isthmian Canal Zone.
St. Paul, Pribilof Islands, Alaska.
Cape Blanco, Oreg.
Eureka, Cal.
Point Arguello, Cal.

St. George, Pribilof Islands, Alaska.
Unalga, Alaska.
Dutch Harbor, Alaska.
Kodiak, Alaska.
Cordova, Alaska.
Sitka, Alaska.
Tatoosh, Wash.
North Head, Wash.
San Diego, Cal.
Balboa, Isthmian Canal Zone.
Guam, Mariana Islands.

The first station, Key West, was opened on December 15, 1912, and other stations followed as fast as regulations could be prepared for their operation. The opening of these stations at once proved to be of the greatest benefit to the public at large, and the business handled by them will undoubtedly increase as the benefits derived are better known. Practically each month shows an increase in the number of commercial messages handled by each station. To June 1, 1913, the total number of paid commercial messages through naval coast stations was 3,833, with a total of 60,157 words.

By Department Order No. 10, of February 7, 1913, all ships of the Navy were opened to public business for the convenience of officers and crew under such restrictions as the commander in chief or senior officer present might prescribe.

In addition to all the accounting necessary for the settlement of traffic accounts between the naval radio service and other systems, by arrangement with other departments of the Government, the office of superintendent of naval radio service is also charged with the settlement of all international accounts involving charges on radio-grams passing between American vessels and foreign coast stations.

The handling of commercial work has operated to increase the military efficiency of the coast stations, giving the operators more work

and practice, rendering them more alert and attentive to duty and more readily able to receive and answer calls from sea of whatever nature, as well as making them familiar with international operating rules. The handling of commercial business has not interfered with the purely military necessities of the stations nor with the official business done by the various departments of the Government.

Reports from the fleet show continued increase in efficiency in the use of radio apparatus, particularly in fleet tactical work, and the good results are primarily due to the very intelligent supervision given this important service by the fleet radio officer, as well as to the continued betterment of material and increased inspection.

AVIATION.

The principal interests during the past year in the development of aviation in the Navy have centered in the use of the flying boat and the establishment of a national aeronautical laboratory in this country. The success of the flying boat seems practically assured and will greatly facilitate the investigations of the aeronautical laboratory.

At the end of the fiscal year there were three flying boats—two of the Curtiss type and one Burgess. The Navy will require other flying boats as soon as modifications now in sight result in improved stability and greater lightness of hull. Craftsmanship of scientific boat builders is now required to decrease the weight, at the same time improving the strength and sea-keeping qualities, and experiments are under way looking to the more extensive use of suitable metal in the hull construction.

Instruction in aviation has been carried on successfully at the aviation camp at Annapolis, Md. During the last week in December, 1912, the camp was transferred to Guantanamo, Cuba, where, in addition to the regular work and instruction, some very satisfactory tests bearing upon problems of naval operations were carried out. At this time the entire Atlantic Fleet was engaged in maneuvers at Guantanamo, and a wide range of estimates of the future usefulness of aeroplanes in naval warfare was obtained. To familiarize the officers and men of the fleet with the peculiarities of the machines and to enable as many as could be spared to obtain instruction in aviation, were the main ideas governing the selection of this location for the camp. Most of those who took the flights, however, did so during the hours of recreation, and an opportunity was thus offered to test the desirability of those most interested for special instruction as aviators.

Up to the end of August, 1912, a total of 593 flights had been made, as shown in a table in the appendix. This table not only shows the increase in the work for the present year but also the total record in all machines from the date of their acceptance to the end of July, 1913. It will be noted from this table that 2,118 flights have been made and that 1,470 passengers have been carried, 8 for purposes of instruction or observation. These flights represent 502 hours, corresponding to a distance of about 27,092 miles covered. The 14 qualified aviators have been in the air, either in control or as passengers, a total of 653 hours. Two hundred and forty officers have taken flights, either for instruction or observation, in addition to their regular duties. In addition to these flights by officers, 256 flights

have been given to petty officers and enlisted men at the camp, some of long duration, and 130 flights have been given to distinguished citizens interested in aerial navigation, including the Secretary of the Navy.

It has been the policy to avoid feats of a sensational nature having no experimental value. Nevertheless, some notable altitude, distance, and endurance flights have been made to test the capacities of the machines, the reliability of motors, the efficiency of instruments, and the navigating skill of the aviators. About the end of March, 1913, the Aviation Corps returned to the camp at Annapolis, and weekly flights across Chesapeake Bay and along its shores were inaugurated, resulting in a great increase of interest and information. While the machines show improvement in respect to motor reliability, they are still lacking in rugged characteristics. The success of the aviator depends greatly upon his intelligent care and his attention to the details of motor repair.

The continuance of the Langley Aerodynamic Laboratory has been authorized by the Regents of the Smithsonian Institution on certain limited funds available by endowment, and the President has approved of cooperation between the various Government departments and this laboratory.

An "advisory committee on aeronautics" has been appointed, the Navy having two representatives, the functions of which are to advise in relation to the work of the laboratory and the coordination of its activities with those of other governmental and private laboratories in which questions concerning the problems of aeronautics can be experimentally investigated.

A broad scheme of cooperation has been inaugurated and is now in cooperation, whereby all institutions in the country, public and private, are enabled to work together in harmony, all fully informed of the work done by each on problems involving the scientific development of aerial navigation. It is now possible to coordinate the work so that all can pull together and so that all technical institutions of learning throughout the country may be able to educate that element most lacking at the present moment, a body of scientific and practical aeronautical engineers, instead of many minds working separately, many going over the same ground uselessly, and all working with separate objects in view. The Navy Department has taken the initiative in this cooperation by detailing an officer to visit Europe to obtain information about the latest laboratory methods and developments, not only to facilitate the experimental work of the Navy, but to actively cooperate with the Langley Laboratory and the Institute of Technology in their efforts to build up an effective course of instruction on the science of aeronautics.

NAVAL MILITIA.

The past fiscal year has witnessed a substantial increase in the number of persons in the organized Naval Militia. Eight new divisions, representing 450 officers and men, have been added, making the total strength of all organizations on January 1, 1913, 618 officers and 6,908 petty officers and enlisted men.

Much practical experience has been gained by officers and men of the Naval Militia by the use of naval vessels loaned to the several

States for their use. Twenty-nine naval vessels are now in use, the average cruise for which is 30 days each year. There is need, however, for more ships, the present number available for Naval Militia being inadequate, and for this reason many organizations are compelled to go without cruising ships. Practically all of the vessels now in use by Naval Militia organizations are old, and many are withdrawn each year on account of age and excessive cost of repair. The bureau believes that a type of ship of a size most suited to the Naval Militia conditions should be constructed to replace the vessels withdrawn.

NATIONAL NAVAL RESERVE.

The importance of having a regularly enrolled and organized Naval Reserve for service in time of war can not be too forcibly impressed upon the country. While it is believed that many ex-service men would respond to the country's call at the beginning of war, much confusion and long delays in manning the ships would be avoided if these men were enrolled, organized, and assigned beforehand. The authorized enlisted strength of the Navy in time of peace consists of 51,500 men. This falls far short of the number required to commission for active service the fighting ships which are now held in readiness in reserve, in ordinary, or out of commission undergoing repairs. Hence the necessity of having an organized well-drilled force ready to man the ships that are not in active commission. The Naval Militia of the various States would help out considerably in this matter, but they fall far short in numbers of men for this purpose. The main dependence of the Navy in this respect is on the men who have honorably left the service after one or two periods of enlistment. These have been trained in the fleet and would unconsciously drop into their places on board ship and resume their former duties. If the ships in reserve and in ordinary should carry on their rolls and station bills a sufficient number of these ex-service men to fill their complements, the question of preparation for war would, as far as the personnel is concerned, be greatly simplified and the prospects of successful operations greatly increased. Many thousands of these men are now in civil life—the Government has educated and trained them at great expense—they are a valuable asset for war, which the country can ill afford to overlook, especially as they can be reclaimed at comparatively little cost. Their interest in the Navy should be stimulated and kept up, so that they may not lapse in their knowledge of ship duties. This may be done by enrolling them in a national naval reserve and giving them short periods for drill on board at stated intervals. There should also be included in the naval reserve ex-officers of the Navy, yachtsmen, and officers and men of the merchant marine, as well as those of other seafaring occupations.

Within the last year there has been established under the Bureau of Navigation an Office of Naval Reserve. This office has done good work in interesting the above-mentioned classes of men in the establishment of a naval reserve. To date it has a list of upwards of 2,600 men who have volunteered for enrollment. No doubt if Congress should authorize the formation of a national reserve in a manner that would make the proposition attractive, there would be no difficulty in recruiting the full quota required in a very short time.

The officers of the collier service, or Naval Auxiliary Service, as it is called, are serving with the fleet, but have not the status of commissioned officers in the Navy—in time of war such a status would be necessary. A Naval Reserve status might be given these officers in time of peace so as to avoid delays in examining and commissioning them after war is declared.

NAVAL OBSERVATORY.

The observatory has continued its work of making astronomical observations, publishing the American Ephemeris and Nautical Almanac, supplying the fleet with navigational instruments, and establishing standard time and difference of longitude. Numerous improvements have been made in the instrumental equipment.

A supplement to the American Nautical Almanac for the year 1913 was issued during the year and it is proposed to issue similar supplements for 1914 and 1915 (the almanacs for those years having already been printed) and to issue the 1916 almanac in revised form. The object is to supply the navigator with astronomical data which he needs in such shape as to avoid elaborate interpolations and to reduce the number of book openings to a minimum. With this end in view, the line officers on duty at the observatory cooperated with the Nautical Almanac Office, with the result that much time and labor are saved for the navigators.

The observatory was represented at the international time conference held in Paris in October, 1912, by Prof. A. Hall, United States Navy, who, with Commander H. H. Hough, United States Navy, were the only American representatives. A letter from the superintendent of the observatory suggesting a determination of the difference of longitude between the Naval Observatory at Washington and the Paris Observatory, using radiotelegraphy, was read at this conference.

Arrangements have been made with the French Government in accordance with this suggestion and the naval radio station at Arlington and the Eiffel Tower radio station will be used as the means of communicating the necessary time signals between them. The astronomical and radio problems involved are highly scientific and are being worked out with great care by the officers of both Governments. While the suggestion originated at the United States Naval Observatory; the French officials who have made a specialty of this branch of science are cooperating most cordially.

Some preliminary work was done in March and April of this year when four French officers visited this country for that purpose, and Commander Hough and Prof. Hall represented the United States in Paris at the same time. Special instruments are being made for this work, and two small buildings are being erected at the Naval Observatory to accommodate the astronomical instruments of the observers of both Governments. These buildings are designed along scientific lines. Direct wires are run from the observatory to the Arlington radio station.

It is expected that the experience gained in this work will be of permanent value in connection with hydrographic surveying, and it is hoped that the Naval Observatory may thus become the base of all such work on this continent and the islands adjacent thereto. It

is proposed to issue a circular to the observatories within the effective radius of the Arlington radio station, making suggestions whereby their longitudes may be determined with considerable accuracy if they will listen during certain specified times for the signals from that station intended primarily for the Eiffel Tower.

In August and September, 1912, the observatory cooperated with the Flower Observatory of the University of Pennsylvania in a determination of the longitude of that place by ordinary telegraphic transmission of time signals.

The time service has been extended so that the noon signals are now sent out on every day of the year, whereas formerly they were not sent on Sundays and holidays. Beginning on the night of April 1, 1913, a night signal service by radiotelegraphy via the Arlington station was begun. This signal is sent from 9.55 to 10 p. m. Information has been received to the effect that time signals are received at a station in the interior of Brazil about 2,800 miles from Washington and at Chicago, and Beloit, Wis. The signals may be received by any ship irrespective of nationality. The master of the British steamship *Santa Maria*, in reporting receipt of the noon signals on a voyage between New York and Colon, writes as follows:

The above came out to within one second of our corrected G. M. C. and I consider it of great importance, for if anything was to happen to the chronometer it would be quite reliable to navigate with results like the above.

The observatory has been actively engaged in endeavoring to improve navigational instruments and methods. The development of the gyro compass has been steady and very gratifying. Reports from ships show that captains and navigators find it of great value in ordinary navigation and piloting, and that steering by it is greatly improved. The main idea in developing this type of compass for the Navy was for use in battle and battle drills, but it has developed into an instrument for constant usefulness.

The Compass Office has prepared descriptions of the gyro compass and the instruments supplied to the service in connection with compass work, and it is planned that these will form two chapters in a revised edition of a book which was originally compiled by Lieut. Commander H. Laning as a practical manual of the compass and published by the Naval Institute. Arrangements will be made to supply this book to the service to replace Diehl's Practical Problems and the Compensation of the Compass.

The department has authorized the establishment of an instrument repair shop at the observatory, and it is expected that it will begin operations about September 1 with two instrument makers. The object is to repair nautical and surveying instruments in this shop, thereby avoiding the long delays incident to securing repairs by contract where advertising is necessary. It is expected that there will be considerable saving effected, but the advantages to be derived from saving of time and having the work under continuous observation are thought to be of even greater value.

HYDROGRAPHIC OFFICE.

The Hydrographic Office has maintained its customary standard of efficiency throughout the year. The reproduction of the British Admiralty charts has made considerable progress, but has been hin-

dered to some extent because the camera makers were unable to supply a satisfactory instrument for the work. One was, however, obtained in May, and the work is now going forward.

The office has kept three surveying ships in the field, and a topographic party in the vicinity of the naval station at Guantanamo. The *Hannibal* has for the past three months been engaged in surveying the Atlantic approaches to the Panama Canal; she will be unable to complete the work this season and will continue it next season. It is hoped that a large scale chart of the approaches may be issued before the canal is open to traffic.

The survey of the east coast of Central America should be completed as quickly as possible, and as soon as the *Hannibal* completes the work she is now engaged upon she will be sent back to the work on the east coast of Central America.

The survey of the coast and harbors of Haiti should be completed in two more seasons.

The collier *Leonidas* has, during the past fiscal year, been converted into a surveying ship and will be commissioned as soon as possible to assist the *Hannibal*.

After the accident to the *Arkansas* the Cape Cruz-Casilda Survey Expedition dragged an area to the southward and westward of Ceiba bank to discover any shoals not before found. No new shoals were found, except one in the immediate vicinity of the bank. Cuatro Reales Channel was redragged and a straighter channel through arranged for.

The work of the Hydrographic Office is increasing very rapidly, and the stock of charts necessary to be kept on hand will very soon be increasing at the rate of 25 per cent a year. It will be necessary to increase the number of employees to care for these. If the commissioning of a large number of ships should become suddenly necessary, the force now employed would be totally inadequate to take care of the situation.

The Hydrographic Office cooperated with the Revenue-Cutter Service from April to July in keeping shipping informed of the ice conditions on the steamship lanes of the North Atlantic. The Navy Department being unable to assign vessels for the ice patrol this year, it was undertaken by the Revenue-Cutter Service, the *Seneca* and the *Miami* being assigned to the patrol. The service was most efficient, and the cooperation between the Hydrographic Office and the Revenue-Cutter Service cordial and close.

The branch offices have kept in close touch with shipping during the year and have furnished and collected a great deal of valuable information.

VICTOR BLUE.

REPORT OF CHIEF OF THE BUREAU OF ORDNANCE.

DEPARTMENT OF THE NAVY,
BUREAU OF ORDNANCE,
Washington, D. C., September 12, 1913.

To: The Secretary of the Navy.

Subject: Annual report for the fiscal year 1913.

1. The following report of the operations of the bureau for the fiscal year 1913 is submitted. As will be seen in subsequent portions of this report, the volume of work performed at the various establishments under the control of the bureau shows a considerable increase over that of the previous year. This increase has not been accomplished without involving an increase of work in the bureau itself, but with the number of officers and civilian employees now attached to the bureau this work has been handled with dispatch and the bureau's work may be said, in general, to be up to date. There are still some details of the work which can not be carried out to the desired degree of thoroughness, but the main object of the bureau's existence, which is to supply to the fleet the latest and most improved types of ordnance and to keep the vessels supplied with all necessary ordnance material, has been accomplished to as complete a degree as the available funds and manufacturing facilities permitted.

2. The officers and civil employees of the bureau work at great disadvantage, owing to lack of sufficient office space, but as the amount of space allotted to the bureau is determined by the size of the building in which the department is located and by the amount of space needed by other bureaus and offices, no improvement in this respect can be looked for under present conditions, and the bureau has therefore been obliged to make the best possible use of the space available by removing all furniture and equipment which could possibly be dispensed with, thereby increasing floor space and air space in the rooms assigned.

3. The artificial light furnished in two of the bureau's rooms is entirely inadequate for the needs of the occupants, but it is understood that the superintendent of the building intends to rectify this condition as soon as funds therefor are available.

GUNS.

4. The manufacture of guns required to arm the *Texas* and *New York* has been completed, and the manufacture of guns for the *Oklahoma*, *Nevada*, and *Pennsylvania*, and for the destroyers and auxiliaries under construction has been carried on without interruption by the Washington Navy Yard, the Watervliet Arsenal, the Bethlehem Steel Co., the Midvale Steel Co., and the American & British Manufacturing Co. The guns for the *Oklahoma* and *Nevada* are nearly completed.

5. A modified design of 14-inch gun has been taken in hand, with a view to reducing to a minimum the droop which is found in all heavy guns of great length.

6. The modification of 12-inch 40-caliber guns has been completed; all of these guns are now completely hooped to the muzzle. The

modification of 8-inch 40-caliber guns to 45-caliber guns by lining and rehooping is nearly completed, and these guns are now available as replacement guns for such 45-caliber guns afloat as may become worn out.

7. Six-inch 50-caliber Mark VI guns and 5-inch 50-caliber Mark V guns are being relined and hooped as fast as the guns become available. In the modified form they are equal in all respects to the latest 6-inch and 5-inch 50-caliber guns.

8. The work of relining eroded guns has progressed satisfactorily during the year, about 80 guns of 8-inch caliber or above having been relined and more than 150 guns of calibers less than 8 inches.

9. Numerous new batteries of guns ranging from 12 inches to 3 inches in caliber have been placed afloat during the year, replacing batteries of guns requiring relining or modifying. The facility with which these changes can be effected at the various navy yards has been greatly increased owing to experience gained in the work. Five-inch cartridge-case guns have been removed from one battleship and will be removed from others as fast as guns of the same caliber using powder in bags are available for the purpose.

10. The bureau is still investigating the question of erosion, and much additional data have been acquired on the subject, permitting of reasonably accurate prediction of the accuracy life of guns of various calibers and designs. It is expected that some increases in accuracy life may be gained by minor improvements in the design of the powder chamber, rifling, and shell bands.

GUN MOUNTS.

11. The 14-inch turret mounts of the *New York* and *Texas* have been completed. The mounts for the triple turrets of the *Oklahoma* and those for the double turrets of both the *Oklahoma* and *Nevada* are nearing completion. All of these mounts have been or are being manufactured complete at the Naval Gun Factory, including all parts of the mount proper, together with the ammunition hoists, rammers, elevating gear, and sights.

12. The 5-inch mounts for the *New York* and *Texas* and the 4-inch mounts for the *Cassin* class of destroyers have been completed during the year and are nearly all delivered to the shipyards where the vessels are under construction. The 5-inch mounts for the *Oklahoma* and *Nevada* are well under way and will be delivered in ample time to be installed before the completion of the vessels.

13. The turrets of the *Pennsylvania* and battleship *No. 39* will be equipped with the same type of triple-gun mount as was adopted for the triple turrets of the *Oklahoma* and *Nevada*.

14. During the year, at the suggestion of this bureau, the recommendations of the turret board of 1907 were thoroughly revised and brought up to date and decision made by the department as to the extent to which the revised recommendations should be made applicable to different classes of vessels. The Department's decision in this respect has resulted in systematizing the work and avoiding large expenditures on vessels whose military importance no longer justified their being made to conform to the latest practice with respect to their turret plans.

PROJECTILES.

15. Four firms in the United States are now engaged in furnishing armor-piercing projectiles of good quality. A small contract for 12-inch projectiles was placed with the Hadfield Steel Foundries Co. (Ltd.), of Sheffield, England, mainly for the purpose of ascertaining the quality of projectiles furnished by this firm as compared with those furnished by domestic firms. The ballistic test under this contract has been made since the close of the fiscal year and was successful.

16. In consequence of the tendency toward increased thickness of armor it has appeared to the bureau to be desirable to increase the penetrative power of armor-piercing projectiles. Experiments along this line have been conducted but are not yet concluded. It is the bureau's opinion that an armor-piercing projectile carrying sufficient explosive to detonate and to completely fragment the projectile after penetrating armor is the best possible projectile for the attack of armored vessels, but in order to make such attack with the highest efficiency, certainty of penetration must be predicated.

17. Experiments with projectiles of foreign manufacture have been conducted at the naval proving ground with the result that, up to the present time, projectiles of domestic manufacture have given the best results. Experiments with projectiles having large and small cavities loaded with large and small quantities of explosives, and with various forms of heads, have been conducted and have afforded valuable data.

18. Experiments have been conducted at the naval proving ground by firing projectiles against plates set at an angle to the line of fire, in order to simulate the condition existing due to angle of fall at long ranges. It is thought that sufficient data on this subject has been assembled to make it possible to incorporate such tests in future specifications for projectiles.

19. The work of modernizing old projectiles on hand, bringing them as nearly as possible into conformity with the latest design, has progressed satisfactorily during the year and will probably be completed during the fiscal year 1914.

SMOKELESS POWDER.

20. Smokeless powder has been manufactured during the year at the naval powder factory at Indianhead and at the three plants of the E. I. du Pont de Nemours Powder Co. under the same specifications as hitherto and subject to the same rigid inspection.

21. No material changes in methods of manufacture at any one of these plants have been made during the year, although experiments have been carried on, both by the Indianhead factory and by the private manufacturers, with a view to the adoption of improved methods tending to lower the cost of powder and to shorten the time required for its manufacture.

22. A clause in the naval appropriation act approved March 4, 1913, prohibited the purchase of powder other than small-arms powder, at a price in excess of 53 cents per pound, and further provided that no expenditures should be made for the purchase of powder unless the factory at Indianhead were operated on the basis of its full maximum capacity.

23. Although this provision was not effective until July 1, 1913, the bureau was able to secure powder from the E. I. du Pont de Nemours Powder Co. during the latter part of the fiscal year 1913 at a price of 53 cents per pound, this price being given in consideration of the quantity of powder purchased by the Army and Navy.

24. No smokeless powder in which diphenylamine has been incorporated has as yet shown any signs of loss of stability, the oldest lot of powder containing this stabilizer being now 5 years old.

ARMOR.

25. Deliveries of armor have been made during the fiscal year 1913 as set forth in the subjoined table:

Ship.	Bethlehem.	Carnegie.	Midvale.	Total.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
New York.....	2,040	875	237.8	3,152.8
Texas.....	1,916	304.8	-----	2,220.8
Oklahoma.....	1,720	166	4,143.01	6,029.01
Nevada.....	895	397	-----	1,292
Miscellaneous.....	265	544.4	288	1,097.4
Total.....	6,836	2,287.2	4,668.81	13,792.01

26. Contracts for approximately 8,000 tons of armor required for the *Pennsylvania* were let during the year, but no deliveries have yet been made. All armor for the *New York* and *Texas* has been delivered; a small amount for the *Oklahoma* still remains to be delivered, and about 6,000 tons for the *Nevada*. There is every indication that the armor for all these vessels will be delivered in such season as not to delay the construction of the vessels.

27. Although the specifications for the armor for the *Oklahoma* and *Nevada* were made slightly more severe than previous specifications with respect to the ballistic test, the manufacturers have been able to meet the requirements of the test and there have been no rejections.

28. The question of the cost of armor and the identity of price bid by the three American concerns engaged in the armor-making business have recently been receiving the Department's attention.

29. In the bureau's last annual report it was stated that neither cemented nor uncemented armor had shown any marked superiority. While this is still true so far as the results of ballistic tests are concerned, the tendency of noncemented armor to spall has led the bureau to require that all armor furnished under its contracts be of the cemented type.

30. All heavy armor now being supplied by the domestic manufacturers is of the K. C. type. Plates made by slightly different processes or containing different alloys have been tested from time to time both in this country and abroad, but so far as the bureau is aware none of these has shown any superiority over the K. C. type of armor.

FIELD GUNS, MACHINE GUNS, AND SMALL ARMS.

31. All existing contracts for the supply of field guns and machine guns have been completed, no new ones having been entered into during the fiscal year just closed. Contracts have been made for the

alteration of a number of caliber .30 Colt automatic guns to permit their use with the latest type of ammunition.

32. The new type of rifle-caliber machine gun invented by Col. I. N. Lewis, of the United States Army, which was referred to in the last annual report, is to be tested by an Army board in competition with other types of machine guns, and the Department has arranged to have a Navy representative present during the trials.

33. Equipping of vessels of the reserve fleet with the latest model Springfield rifle has been carried on as rapidly as the funds available permitted. At present there are still some vessels in reserve equipped with the Krag-Jørgensen rifle.

34. The supplying of the active fleet with the new .45 caliber automatic pistols has been practically completed during the year.

TORPEDOES.

35. In so far as questions of design are concerned, the torpedo situation has advanced somewhat during the past year. The two new types of long-range, high-speed torpedoes referred to in the last two annual reports are now being manufactured in quantities for new vessels of the fleet.

36. As to the number of torpedoes on hand, the situation is slowly improving, although it is not yet satisfactory. The adoption by the Department during the year of a definite policy as to the number of torpedoes to be carried in reserve has permitted the bureau to make plans for the future which, if carried out, will result in there being a sufficient number of torpedoes on hand to meet the probable requirements of war.

37. The bureau has funds available for the purchase or manufacture of a part of the total number of torpedoes at present required and will request, in its annual estimates, a further appropriation sufficient to supplement the funds already available to the extent necessary for one fiscal year's work.

38. The bureau has a number of times brought to the attention of the Department the necessity of encouraging and requiring the vessels of the fleet to have frequent torpedo practice in suitable localities in order that the personnel might become familiar to the fullest possible extent with the peculiarities and requirements of the torpedo equipment furnished. The maximum of improvement in material can not be hoped for except as the result of intelligent criticism from the fleet, and such criticism can be furnished only by officers and men who are familiar with the weapons criticized.

39. The *Montgomery* and *Vesuvius* have continued their experimental and testing work with very useful and satisfactory results, the *Montgomery* being employed as an experimental ship and the *Vesuvius* as a testing ship attached to the naval torpedo station. The *Vesuvius* will shortly be displaced by the new torpedo-testing barge, which will, it is believed, prove more satisfactory in this work than the *Vesuvius*, being designed especially for it and having facilities which could not be placed on board a vessel the size of the *Vesuvius*.

MINES.

40. The bureau has carried on exhaustive tests of anchored contact mines of various makes, with a view to selecting one which seemed to offer the most advantages for use in our service.

41. Similar tests of floating mines have been carried on, resulting in the development at the torpedo station of a low-cost mine of this type, which on test has been found to function satisfactorily and which will, it is believed, meet the requirements of the service.

42. The Department having during the year adopted a policy regarding the number of mines of the several necessary types to be provided, the bureau will be able, with funds at its disposal and with others to be asked for in the annual estimates, to provide for fitting out the U. S. S. *Baltimore* as a mine ship and for accumulating a fairly satisfactory reserve of mines for this vessel and for the *San Francisco* and for such other vessels as may be designated as mine vessels or mine layers.

43. Floating mines of the type developed can be manufactured so quickly when desired that the bureau does not propose to accumulate them in large quantities. Plans have been prepared, however, for securing them in quantity and on short notice when necessary.

EXPERIMENTAL WORK.

44. The experiments with armor-piercing shell and with high explosives, which were initiated during the previous fiscal year in compliance with the wishes of the Committee on Naval Affairs, House of Representatives, have been continued, but are not yet completed. They have been made the subject of special reports to the Department from time to time.

45. Experimental work has also been carried on at the naval proving ground and at the naval torpedo station, with a view to determining the relative value of guncotton and other explosives for use in mines and torpedo warheads. As a result of this experimental work the bureau has acquired a fund of information which will be of the greatest value in designing future ordnance material.

46. The U. S. S. *Tallahassee* has been a valuable asset to the bureau, enabling it to carry on experimental firing, which could not have been done at Indian Head.

THE EIGHT-HOUR LAW.

47. The act of Congress approved June 19, 1912, commonly known as the eight-hour law, became effective, so far as the Navy Department was concerned, on August 22, 1912, the date of the approval of the naval act of that year which provided that the general eight-hour act should be in force as to all contracts authorized by the naval act from and after its passage. The law did not become effective in general until January 1, 1913.

48. The bureau has furnished its inspectors with all available information regarding the application of this law, all interpretations thereof made by competent authority, and with instructions as to the extent of their duties in its enforcement. No violations of the act have been reported to the bureau.

49. Prices of some classes of material purchased by the bureau have been increased since the eight-hour law became effective, the contractors stating that the operation of the law increased the cost of production, necessitating an increase of price. The law has not been in operation a sufficient length of time to permit of a positive

or intelligent statement as to its ultimate effect on the cost of ordnance material, but it is evident that some increases already made will be permanent.

NAVAL GUN FACTORY.

50. The planning and estimating division established at the gun factory has done valuable work, and further development of the system will doubtless lead to more expeditious carrying on of manufacturing work and production of more reliable estimates of projected work than have hitherto been possible.

51. The accounting office of the gun factory has been of very great assistance in the manufacturing work and to the bureau.

52. The following is a tabulated statement of the most important work performed at the gun factory during the year:

Guns, all calibers:	
Completed	110
Relined, 3-inch to 13-inch (including 11 converted)	37
Converted to later models (including 11 also relined)	15
Partly completed (including guns in process of manufacture, being relined, rebuilt, or converted)	245
Total	396
Breach mechanisms:	
New mechanisms completed	127
Modified and converted	314
Total	441
Miscellaneous:	
New and relined guns on contract and from Watervliet Arsenal star-gauged and examined before and after proof	145
Drill guns, all calibers	43
Bore sights completed	161
Yoke sights from 75 to 100 per cent completed	364
Gun mounts, entire or major portions thereof, built, rebuilt, or extensively modified	255
Turret ammunition hoists	32
Torpedo tubes completed	43
Powder tanks	20,602
Cartridge cases manufactured	17,226
Smokeless-powder packing boxes	15,500
Primers completed	78,500
Ammunition boxes and chests	10,000
Castings produced in foundry	pounds 3,416,937
Forgings	do 1,078,254
Number of shipments made	2,675
Total weight of shipments	pounds 20,693,783
Expenditures, labor and material	\$4,875,107.74
Total value of finished work	\$4,511,799.06

53. The total value of finished work is less than the sum of labor and material expended, owing to a considerable quantity of material being shipped late in the fiscal year and the necessary accounting transactions not having been completed in time to include its value in the total of finished work.

54. Money available for new machinery during the fiscal year has been expended in providing new facilities for the handling of large gun work or in replacing obsolete and inefficient machines. Additional improvements of the same character are contemplated for the current fiscal year, for which funds are already available.

55. One of the most urgent needs of the gun factory at the present time is a new and modern storehouse of large capacity. Estimates for such a building have been submitted by the Bureau of Yards and Docks.

NAVAL PROVING GROUND.

56. The following are the principal items of proof work completed during the year:

	Number.	Increase over pre- vious year.
		<i>Per cent.</i>
Guns proved.....	351	58
Gun mounts proved.....	82	164
Armor plates tested.....	84	
Lots of projectiles tested.....	248	31
Experimental projectiles tested.....	58	200
Lots of cartridge cases tested.....	86	70
Lots of powder tested.....	112	-11

57. The increase in number of guns proved is almost entirely in the large-caliber guns, the amount of proof work for smaller guns being notably on the decrease.

58. While the number of armor tests was the same as for the preceding year, the individual plates have increased in weight and size, thus increasing the time and cost of tests.

59. While the number of lots of powder tested during the year was less than during the preceding year, the quantity of powder represented is considerably greater since all powder is now made in 100,000-pound lots, whereas during the previous year all Indianhead powder was manufactured in 50,000-pound lots.

60. Among the most interesting and instructive items of experimental work were the following:

Fourteen-inch triple-gun mount.

Tests of explosive gelatin and other high explosives.

Tests of the audibility of saluting and signal guns.

Tests of smoke-producing shell.

Tests of the explosive qualities of celluloid.

Tests of angular impact of projectiles with a view to developing an improved formula for oblique penetration.

Firing against a conning tower containing fire-control and navigational instruments.

Tests to determine the minimum wall thickness possible for projectiles in connection with developing a pyrotechnic bomb.

Tests of a hangfire extinguisher invented by a Greek naval officer.

Tests of firing intervals of different types of primers.

Determination of the effect of sunshine on droop of guns.

61. A considerable amount of proof work in armor, projectiles, and other ordnance material has been conducted for foreign Governments who have placed contracts in the United States.

62. Substantial improvements in the working facilities at the proving ground have been made and existing facilities have been re-arranged in such a way as to facilitate work, thus reducing the cost

and time involved in experimental and proof work. Among the changes and improvements, the most important are as follows:

Completion of a new railroad track and turntable in the valley, and the acquisition of a 97,000-pound steam locomotive.

A new explosion chamber has been built which will hold 12-inch and 14-inch fragmentations.

Considerable swamp land has been cleared and filled in in the valley, thus adding to the parking space and improving sanitary conditions.

All scrap armor and projectiles have been disposed of to date, thus improving the appearance of the station and rendering greater area available for the storage of useful material.

The photographic room has been equipped for moving-picture work and a moving-picture camera and outfit provided.

Proof shot have been developed for all proof work except ranging, and have reduced the cost, time, and danger of proof work to a very marked extent.

63. The total expenditures from the bureau's appropriations for all tests and experimental work for the year, including both labor and material, were \$335,485.73, which is an increase of $8\frac{1}{2}$ per cent over the expenditures for the previous year. As will be seen from the statements of percentage increase of work of various kinds, the increase in volume of work has been very much greater than the increase in expenditures, which is an indication that the work has been performed more economically than heretofore, although the comparison can not be called exact.

64. There was one serious accident during the year, resulting in the loss of life of Robert S. Davis, ordnance man. While two sand diggers were being moved the strut that was placed between them slipped and Davis was jammed between the two diggers, receiving injuries which resulted in his death the following day. There were 48 cases of minor accidents to the employees of the proving ground and powder factory.

POWDER FACTORIES.

65. The output of this plant for the past year was about 1,800,000 pounds of new powder and about 965,000 pounds of reworked powder. The amount of new powder manufactured was more than a quarter of a million pounds in excess of that for the previous year, while the amount of reworked powder was slightly less than for the previous year, owing to the necessity of shutting down the regrinding plant for a period of six weeks on account of a breakdown in machinery.

66. The production costs of both new and reworked powder were slightly reduced below the costs of the previous year, although the prices of some of the materials used were slightly greater than during the preceding year. Sodium nitrate and alcohol both advanced a fraction of a cent a pound, while there was a slight reduction in the price of cotton. In general, the costs which can be controlled at the powder factory, such as the cost of labor, power, etc., showed slight reductions.

67. No serious accidents or fires occurred during the year. Numerous improvements in facilities and in methods of work have been introduced which have tended to reduce labor and repair costs of

powder produced. The modification of the blending bins, to permit handling of a lot of 100,000 pounds of powder, instead of 50,000, as formerly, has not only reduced the manufacturing cost somewhat, but has materially reduced the proof cost. The saving in proof cost for the fiscal year is estimated at about \$16,000, while the total cost of the alterations to the blending bins was slightly under \$13,000. The improvement, therefore, paid for itself in less than a year.

68. The greatest needs of the factory for which no work has yet been started are in the direction of storage facilities for sulphur, cotton, and finished powder. Some of these can be provided out of the bureau's annual appropriations, but others will be made the subject of recommendation to the Department in connection with the annual estimates.

69. A considerable volume of work has been done at the powder factory in the manufacture of rockets and Navy night signals, the total number of stars, rockets, lights, etc., manufactured being 31,535.

MARINE RIFLE RANGE.

70. The location of the marine rifle range at Winthrop, Md., on the Stump Neck portion of the proving ground reservation, is a continuing source of trouble and delay in the work of the proving ground. The facts in regard to it have been previously reported to the Department, and it is understood that the Marine Corps is investigating various other sites with a view to abandoning the Winthrop range. The dwelling houses and barracks of this establishment are close to the line of fire of 12-inch and 14-inch guns and are well inside the danger zone established by a board appointed by the Department. Although the most stringent orders exist as to the vacation of the rifle range when firing over it is necessary there is always present an element of danger to life and property which can not be removed, except with the removal of the range itself.

NAVAL TORPEDO STATION.

71. The work of manufacturing torpedoes at the station has been carried on in a satisfactory and expeditious manner. The 1913 project of manufacture has been completed, resulting in the delivery to service of 75 torpedoes. The 1914 project, consisting of 75 torpedoes, is well under way, and the 1915 project of 90 torpedoes has been begun. It is believed that with the present facilities at the torpedo station, provided the amount of repair work does not materially increase, the station will be capable of turning out 90 torpedoes per year after July 1, 1915. Torpedoes furnished to the Department under contract have been delivered at the Torpedo Station, overhauled, tested, and prepared for issue to service. Complete torpedo outfits for destroyers of the *Aylwin* class will be ready for delivery to these vessels as soon as they are commissioned.

72. The bureau will submit in its annual estimates a project for a moderate expansion of the manufacturing facilities at this station in order to bring the manufacturing capacity up to 150 torpedoes a year, in addition to such repair work as may be thrown upon the station by the requirements of the fleet.

73. During the year there have been received from the service for repair 138 torpedoes, and 123 torpedoes have been issued to service,

aside from complete outfits. Fifteen new outfits, comprising 106 torpedoes, have been issued to vessels. In addition to this, 11 outfits, comprising 82 torpedoes, have been issued to vessels to replace outfits of torpedoes of earlier and less serviceable models.

74. In addition to the torpedo work performed at the station, the manufacture of primers has been continued and there have been completed and issued to the service 120,000 primers of various types.

75. The total expenditures at the station, including repairs to torpedoes and torpedo appliances, maintenance of the station, and miscellaneous expenditures, amounted to \$1,307,594.29. The value of articles manufactured was \$973,491.21. The total weight of stores received and shipped during the year, as shown by bills of lading, was 3,576,348 pounds, an increase of upward of 800,000 pounds over the previous year. In general, the volume of work performed and handled at the station was slightly in excess of that of the previous year.

76. The seamen gunners' school has been maintained as heretofore, but in accordance with the bureau's recommendations to the department the course of instruction has been modified so as to devote a greater portion of the available time to instruction relating exclusively to torpedoes and mines, the general machine-shop instruction being given to those classes attached to the Washington Navy Yard. During the year 186 new men were received for instruction, of whom 96 finished the course and were transferred to the general service; 87 men remained at the station on July 1, of whom 39 will be graduated on August 31 and 48 on December 31.

77. The acquisition of the torpedo-testing barge, which is fitted with a lecture room, small machine shop for torpedo repair work, and berthing space for a number of men, will make it possible to handle larger classes of seamen gunners than heretofore, and the bureau has recommended to the Department that the size of the classes be increased.

78. A large amount of experimental work in connection with torpedoes, mines, primers, and other matters pertaining to the work of the station has been carried on with beneficial and instructive results. Owing to the small staff of officers and the demands made on their time by the manufacturing and repair work of the station, the amount of experimental work carried on has been less than would be desirable.

79. The most urgent need of the torpedo station at present is a large fireproof storehouse for the storage of torpedoes, many of which are now stored in inflammable structures and many of which it will soon be necessary to store in the open unless a storehouse is provided. The bureau will submit a request for such a storehouse in its annual estimates for the next fiscal year.

NAVAL MAGAZINES.

HINGHAM, MASS.

80. Title has now been acquired to all the land set aside for the establishment of this magazine. The erection of all buildings contemplated in the original plan of this magazine has either been completed or funds have been appropriated for their completion. Owing to the expansion of the fleet since the time this magazine

was planned some additional buildings have been found necessary, and additions to the plant will doubtless be found necessary in the future.

81. The new drawbridge across the Weymouth Back River authorized by the Massachusetts Legislature pursuant to an order of the War Department was completed and put in service during the winter of 1912-13. The new bridge, with a wide draw, permits of transporting ammunition to and from the magazine with increased facility; the improvements to the channel leading to the magazine which were authorized by the act of August 22, 1912, have resulted in a 12-foot channel to the magazine except at one spot which is still to be dredged.

NEW YORK DISTRICT.

82. New construction and improvements authorized by Congress are in progress at Iona Island, including the erection of a lunchroom and locker house for the employees.

83. At the Lake Denmark powder depot the stone fire and boundary wall authorized by Congress is in progress, the material being largely taken from the reservation and the work of erection being performed by magazine labor.

84. The naval act of August 22, 1912, authorized the exchange of the potassium nitrate stored at the niter depot, Malden, Mass., for an equivalent amount of sodium nitrate for use in the manufacture of smokeless powder. This exchange has been effected and about 7,000,000 pounds of sodium nitrate has been received and stored at the Picatinny Arsenal, which adjoins the naval powder depot. The Navy having no facilities for storing this material, a storage place was furnished by the Ordnance Department of the Army until such time as provision could be made at the naval powder factory, Indian Head, for receiving the nitrate.

85. The naval magazine at Fort Lafayette, New York Harbor, has been used principally for storing ammunition for issue to vessels, for receiving ammunition turned in by vessels, for storing wrecking outfits, and ammunition for issue to the Revenue-Cutter Service, and as a ready magazine for storage of small-arms ammunition for issue to vessels arriving at or departing from the port of New York.

86. The storage capacity of the fort has been increased about 75 per cent by the construction of second floors in the casemates.

FORT MIFFLIN, PA.

87. The development of this magazine to the capacity needed to meet the needs of the Atlantic Reserve Fleet has been retarded by the fact that no estimates for improvements were submitted to Congress at the last session owing to some uncertainty that then existed as to the future status of the magazine. Additional storage capacity is needed, but the most urgent need is the filling in of the lowlands of the magazine in order that future construction may proceed on a logical and permanent basis. The bureau's estimates for the fiscal year will include items necessary as a preliminary to the filling-in operations.

ST. JULIENS CREEK, VA.

88. Reductions in the unit cost of work at this magazine are general, owing to minor improvements in methods and apparatus and to

the relocation of certain buildings with a view to systematizing and grouping operations and reducing transportation costs. The cost of handling material in the magazine grounds is greater at this magazine than at others, owing to the fact that all material is moved by hand or mule power on cars. The bureau is not prepared, however, to recommend the installation of a plant for charging compressed-air locomotives, and the use of storage-battery locomotives at a magazine is considered inadvisable.

89. A considerable amount of work in modernizing projectiles has been done at this magazine at very low cost as compared with the cost of similar work at the navy yard. As this work was limited in amount and will soon be completed, it is not thought advisable to increase the facilities of the magazine for the purpose of its performance.

GUANTANAMO, CUBA.

90. The project of constructing a naval magazine of limited capacity as an adjunct to the naval station, Guantanamo, Cuba, was authorized by Congress in the act of March 3, 1911.

91. Construction work is proceeding on a magazine building, a shell house, one set of quarters and office building, and wharf. It is expected that the work will be complete by November 1, 1913.

92. This magazine is intended merely as a temporary storage place for such ammunition as it may be necessary to deliver to or receive from vessels visiting this station.

MARE ISLAND, CAL.

93. The volume of the work of preparation of ammunition performed at this magazine during the past fiscal year was about 30 per cent less than during the preceding year. Advantage was taken of the slackness of work in this respect to repair and overhaul a large number of powder tanks, powder boxes, and cartridge cases which had accumulated, so that the volume of this class of work was about 280 per cent of that performed in the preceding year.

94. The unit cost of assembling ammunition shows a considerable reduction over the preceding year, varying from 2 cents to 20 cents per round. These reductions were principally brought about by improving working facilities and systematizing and grouping the various classes of work involved. The average reduction in cost per round was about 30 per cent.

95. The principal improvements and alterations in buildings consisted of extending and remodeling a plant for loading shell with high explosives and removing a bomb-proof ceiling from magazine building No. 20. This building had a very heavy arched masonry roof which constituted a serious element of danger in case of explosion. The building now has a slate roof covered with galvanized iron.

PUGET SOUND, WASH.

96. The ordnance work at this magazine has been of a routine character. The facilities of the magazine are being slowly added to in accordance with congressional authorization, so that it is now able to handle the greater part of the ammunition work for vessels based on the Puget Sound Navy Yard, some of which has hitherto necessarily been performed at the Mare Island magazine.

KUAHUA, HAWAII.

97. The construction work of this magazine has proceeded under the supervision of the Bureau of Yards and Docks. The magazine is not yet ready for use as a working magazine.

OLONGAPO AND CAVITE, P. I.

98. The magazines attached to the Cavite Naval Station are situated in the old Spanish casemates and are not suited to the storage of smokeless powder. Unstable powders which have been placed in water for shipment to the United States are stored there, to relieve the storage capacity at Olongapo. All work in the preparation of ammunition and other work proper to a magazine is carried on at Olongapo.

99. The naval magazine and laboratory at Olongapo has carried on its customary work during the past year, the volume of work being somewhat less than during the preceding fiscal year; 6,140 tests of smokeless powder have been made, as compared with 8,830 during the previous year, the reduction being largely accounted for by the fact that the older powders have been mostly withdrawn from the Asiatic Station and none but stabilized powders furnished in their place.

100. Among the public works contemplated for the current year is the construction of a dry air filling house in which the air will be artificially dried. As one of the chief enemies to the stability of smokeless powder is moisture it is essential that it shall not be exposed to air when the latter is moisture laden, and under that condition there are but few days in the year in the Philippines when the percentage of moisture in the air is sufficiently low to permit of safe exposure of powder. Experiments have been made with various types of air drying apparatus, both by the Army and Navy, in the Philippines, and it is thought that a satisfactory installation has been developed.

INSPECTION DUTY UNDER THE BUREAU.

101. Naval inspectors of ordnance have been maintained at several manufacturing establishments and the general tenor of their annual reports to the bureau indicates a considerably increased volume of work as compared with the previous fiscal year.

102. In several inspection districts the inspection duties under the Bureau of Steam Engineering and the Bureau of Ordnance are combined in one inspector with one or more assistants, some of whom are naval officers and some civil-service employees. The inspection work is carried on very economically and the cost of inspection represents but a small percentage of the cost of the work inspected.

STUDENT OFFICERS.

103. The system of instruction of student officers in ordnance, which was established some years ago, has been altered during the year by the establishment at the United States Naval Academy at Annapolis of a post-graduate department in which officers are in-

structed in the specialties for which they are selected. It has been the plan for the student officers to spend four months at the post-graduate school and then to pursue a course of practical instruction at various ordnance manufacturing establishments for the remaining portion of their two years' course.

104. The results obtained from the previous system of ordnance instruction which did not include a term at Annapolis were eminently satisfactory and produced officers well grounded in the theory and practice of ordnance. The new system has been in operation too short a time to permit of any expression of opinion as to its advantages as compared with the previous system.

N. C. TWINING.

REPORT OF THE CHIEF OF THE BUREAU OF CONSTRUCTION AND REPAIR.

NAVY DEPARTMENT,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, D. C., November 4, 1913.

SIR: I respectfully submit herewith the report of the bureau for the fiscal year ending June 30, 1913, together with estimates for appropriations required for the fiscal year ending June 30, 1915.

* * * * *

SHIPBUILDING WORK AT NAVY YARDS.

There is now a greater value of new shipbuilding work in progress and authorized at navy yards than ever before in the history of the new Navy. It includes the battleship *New York*, also battleship 39 (no name assigned as yet) at the navy yard, New York; and the river gunboats *Monocacy* and *Palos*, also the fuel ships *Kanawha* and *Maumee* at the navy yard, Mare Island. For 18 months, at least, the navy yards at New York and Mare Island—the only yards equipped for expeditious and economical shipbuilding—will be taxed to their maximum capacity in shipbuilding, unless their facilities are increased.

Battleship "New York."—The U. S. S. *New York* is now under construction at the navy yard, New York. Her construction in a navy yard was authorized by the naval appropriation act approved June 24, 1910, and the Secretary of the Navy designated the navy yard, New York, as the place of building.

When estimates of the cost of construction of this battleship were received in the department, it was found that they exceeded the limit of cost imposed by Congress in the naval appropriation act, and in accordance with an opinion of the Attorney General, the Secretary of the Navy suspended all work on the vessel. The Secretary of the Navy reported the fact to Congress and the naval appropriation act of March 4, 1911, contained the following provision:

* * * and the limit of cost, exclusive of armor and armament, of the battleship authorized and directed by the naval appropriation act approved June 24, 1910, to be constructed in one of the navy yards, is hereby increased to \$6,400,000, exclusive of indirect charges.

Upon the passage of the act the work of preparation for building the vessel was immediately resumed.

The naval appropriation act of March 4, 1911, contained also the following provision:

Provided, That no part of any sum herein appropriated shall be expended for the purchase of structural steel, ship plates, armor, armament, or machinery from any persons, firms, or corporations, who have combined or conspired to monopolize the interstate or foreign commerce or trade of the United States, or the commerce or trade between the States and any Territory or the District of Columbia in any of the articles aforesaid, and no purchase of structural steel, ship plates, or machinery shall be made at a price in excess of a reasonable profit above the actual cost of manufacture.

and the placing of contracts for the material of the *New York* was again delayed pending an opinion by the Attorney General as to the steps necessary to insure compliance with the above provision. The necessary procedure having been determined, contracts for material were placed, and the keel of the *New York* was laid September 11, 1911. By decision of the Department the constructional period of 36 months is considered as beginning May 1, 1911.

This vessel was launched October 30, 1912. On October 1, 1913, the hull of the *New York* was reported as 89.9 per cent completed, and the machinery as 88.1 per cent completed. Her constructional period as set by the department expires May 1, 1914. Her completion prior to the above date is anticipated.

Collier "Jupiter."—The circumstances relating to the construction of this fleet collier at the navy yard, Mare Island, are as follows:

The act making appropriations for the naval service for the fiscal year ending June 30, 1909 (approved May 13, 1908), contained the following provision:

Two fleet colliers of 14 knots trial speed, when carrying not less than 12,500 tons of cargo and bunker coal. One of said colliers to be built in such Government yard on the Pacific coast as the Secretary of the Navy shall direct. Cost not to exceed \$1,800,000 each, and toward the construction of both \$1,500,000 is hereby appropriated

Shortly after the passage of the above-noted appropriation bill the department advertised for proposals from private shipbuilding firms for the construction of one of these colliers by contract. On account of the great scarcity of work in shipyards at the time of inviting proposals for the construction of this collier, the bids received were unusually low, and the department was able to place a contract for the construction of this vessel at a price less than half of the limit of cost authorized by Congress for said construction. The department therefore determined to bring this fact to the attention of Congress, and to request authority to place contracts for four colliers at a total price not exceeding that already authorized for the construction of the two colliers specified in the naval appropriation bill of May 13, 1908. A recommendation to this effect from the Secretary of the Navy received the favorable consideration of the naval committee of the House, and a clause practically embodying the department's recommendation was incorporated in the naval appropriation bill as reported to the House. The naval committee's clause relating to the construction of colliers was, however, considerably modified before the bill actually passed the House, and was still further modified in the bill as it finally passed the House and the Senate,

the act of March 3, 1909, containing the following provision for colliers, under the general heading "Increase of the Navy:"

One fleet collier of 14 knots trial speed when carrying not less than 12,500 tons of cargo and bunker coal, to cost not exceeding \$900,000.

* * * * *

Provided, That no part of the above appropriation shall be used for the payment of the construction of any collier the total cost of which shall exceed \$900,000.

Shortly after the passage of the naval act of March 3, 1909, the bureau, under the authority of the department, directed that there be made at the navy yard, Mare Island, careful estimates of the cost of constructing at that yard the hull and machinery of a collier such as that authorized in the naval acts of May 13, 1908, and March 3, 1909. These estimates when submitted showed conclusively that the collier could not be built within the limit of cost fixed by Congress in the act of March 3, 1909, and the department decided to report all the facts to Congress before taking any further steps.

The naval appropriation bill approved June 24, 1910, contained the following provisions:

* * *

Provided, That the unexpended balance of the sum of \$1,500,000 appropriated toward the construction of two fleet colliers authorized by the naval appropriation act approved May 13, 1908, is hereby reappropriated and made available for the construction of the collier therein designated to be built on the Pacific coast in such Government yard as the Secretary of the Navy shall direct: *Provided further*, That the cost of said collier shall not exceed the sum of \$1,000,000.

The previous estimates of the cost of construction of this collier at the navy yard, Mare Island, exceeded the above-noted limit of cost imposed by Congress; but in order that the estimates should be brought up to date, additional estimates were requested from that navy yard. The estimate of cost of construction of this collier when received from the navy yard, Mare Island, indicated clearly that this collier could not be built at a navy yard within the limit of cost imposed by Congress, namely, \$1,000,000.

The facts were again reported to Congress, and the naval appropriation bill approved March 4, 1911, contained the following express provision, which met the estimates for cost of construction received from the Mare Island yard:

Provided, That the limit of cost of the collier authorized and directed by the naval appropriation act, approved May 13, 1908, to be built in such Government yard on the Pacific coast as the Secretary of the Navy shall direct, is hereby increased from the modified \$1,000,000 limit of cost imposed by the act of June 24, 1910, to \$1,200,000, exclusive of indirect charges.

In accordance therewith, the Mare Island yard was directed to proceed with the construction of the vessel; and upon determination of the type of propelling machinery the constructional period was fixed at 22 months from July 3, 1911.

The keel of the *Jupiter* was laid October 18, 1911; the vessel was successfully launched August 24, 1912; and her hull was reported 100 per cent completed by report dated July 14, 1913. The commandant of the navy yard, Mare Island, has reported the direct cost of this vessel for a merchant complement as \$1,061,123.87; the indirect cost as \$203,725.44; and the expenditure for "Leave, holiday, disability, and miscellaneous" as \$70,393.21. These figures give \$1,335,242.52, or \$1,264,849.31 exclusive of "Leave, holiday, disa-

bility, and miscellaneous," as the total cost of the vessel. The total amount expended from the appropriation to date is \$1,342,380.02, which figure includes certain minor items rendered necessary by the assignment of a naval complement to the vessel.

River gunboat "Monocacy."—The U. S. S. *Monocacy* was authorized by act of Congress of March 4, 1911. Bids were invited for her construction, in the usual manner, and four navy yards were asked to submit estimates. Only one bid was received from a private ship-building company, and that practically at the limit of cost imposed by Congress. As the estimates received from navy yards were materially less than the one bid received, the Bureau of Construction and Repair and the Bureau of Steam Engineering jointly recommended to the department that the construction be undertaken at Mare Island Navy Yard. The Secretary of the Navy ordered Mare Island to proceed with the construction of this vessel on August 13, 1912.

Owing to the difficulty experienced in the delivery of "bullet-proof steel," the progress on the gunboat was not as rapid as was anticipated. Her keel was laid April 28, 1913. On October 1, 1913, the hull of the *Monocacy* was reported as 83.9 per cent and the machinery as 85.2 per cent completed; and December 21, 1913, has been reported as the date when the *Monocacy* would be dismantled and ready for shipment. It is reported further that the cost of the construction will be inside the estimate submitted by the navy yard.

River gunboat "Palos."—The naval appropriation act of August 22, 1912, made available for the construction of a river gunboat the appropriation contained in the act of May 4, 1898, for one gunboat to be built on the Great Lakes.

In view of the department's experience in obtaining bids for the construction of the *Monocacy*, the improbability of obtaining bids at the time to the advantage of the Government, the existing demands for river gunboats on the China station, and the time saved in starting the work, the department on August 23, 1912, ordered that this vessel be constructed at the navy yard, Mare Island, simultaneously with the building of the *Monocacy*.

Owing to the difficulty experienced in the delivery of "bullet-proof steel," the progress on the gunboat was not as rapid as was anticipated. Her keel was laid April 28, 1913. On October 1, 1913, the hull of the *Palos* was reported as 83.9 per cent, and the machinery as 98.3 per cent completed; and December 21, 1913, has been reported as the date when the *Palos* would be dismantled and ready for shipment. It is reported further that the cost of the construction will be inside the estimate submitted by the navy yard.

Fuel ships "Kanawha" and "Maumee."—These vessels are now under construction at the navy yard, Mare Island, Cal. Their construction was authorized by the naval appropriation act for the fiscal year ending June 30, 1913, and approved August 22, 1912, as follows:

Two fuel ships to cost, exclusive of armor and armament, not to exceed \$1,140,000 each, and which shall be built in navy yards, one to be built in a navy yard on the Pacific coast.

Pursuant to this authorization plans and specifications for these vessels were prepared by this bureau and the Bureau of Steam Engineering. Preliminary estimates for the construction of one of these vessels were obtained, after consideration of which the Navy Department approved the recommendation of the bureaus that one

vessel be built at the navy yard, Mare Island, and that decision as to the place of building the second vessel be deferred pending the receipt of additional estimates. On January 23, 1913, the commandant of that yard was accordingly instructed to proceed with the construction of the *Kanawha*.

The naval appropriation act for the fiscal year ending June 30, 1914, and approved March 4, 1913, contained under the heading "Bureau of Steam Engineering" the following authorization:

* * * That the unobligated balances under the appropriation "Steam machinery" for the fiscal years ending June 30, 1912, and June 30, 1913, not exceeding \$250,000, are hereby reappropriated and made available for the development of a type of heavy oil engine suitable for use in one of the fuel ships authorized by the act approved August 22, 1912, and the expenditure thus incurred shall not be a charge against the limit of cost of such vessel.

The Navy Department approved the recommendations of this bureau and the Bureau of Steam Engineering, made after careful consideration of all the estimates received from various navy yards, that the *Maumee* be built at the navy yard, Mare Island, and that the machinery of heavy oil type be built at the navy yard, New York, and subsequently be shipped to Mare Island for installation on the vessel. This course permitted the preparation of plans, ordering and assembling of material for both vessels to be proceeded with simultaneously with considerable consequent economy. The *Maumee* will be built on the same building ways as the *Kanawha* immediately following the launch of the latter vessel, thereby avoiding a large expenditure for an additional building slip. The commandant of that yard was accordingly directed to proceed with the construction of the *Maumee* except main propelling machinery on March 24, 1913.

The estimated time for the construction of these vessels is for the *Kanawha* 22 months and for the *Maumee*, in so far as the hull is concerned, 27 months, both dates to begin with the delivery of material. On October 1, 1913, the navy yard reported that the first shipment of structural material was received during the month of September; that the hull work on the *Kanawha* was 3.1 per cent completed, and on the *Maumee* 0.1 per cent; that the machinery of the *Kanawha* was 7.5 per cent completed, and the machinery of the *Maumee* was 0.0 per cent completed.

Battleship No. 39.—The construction of this vessel is now in hand at the navy yard, New York, N. Y. Her construction was authorized in the naval appropriation act approved March 4, 1913, as follows:

* * * That for the purpose of further increasing the Naval Establishment of the United States the President is hereby authorized to have constructed one first-class battleship, carrying as heavy armor and as powerful armament as any vessel of its class, to have the highest practicable speed and greatest desirable radius of action, and to cost, exclusive of armor and armament, not to exceed \$7,425,000: *Provided*, That the battleship herein authorized shall be built in a Government navy yard.

After consideration of estimates for the construction of this vessel, the department designated the above yard as the place of building. The commandant of that yard was accordingly directed to proceed with the construction of this vessel on June 19, 1913.

By decision of the department the constructional period of 36 months is considered as beginning September 15, 1913, the date of award of contract for the main structural material for the vessel.

On October 1, 1913, the navy yard reported that work on plans and in the mold loft was being proceeded with, but no material had yet been received.

* * * * *

LIST OF VESSELS OF THE UNITED STATES NAVY.

The list of vessels heretofore published as a part of this report has been omitted. This information is now published by the department in a special pamphlet, "Ships' Data, United States Naval Vessels."

ADDITIONS TO THE NAVY SINCE JUNE 30, 1912.

The additions to the effective force of the Navy by the completion of vessels building under contract and at navy yards are as follows: Battleships *Arkansas*, *Wyoming*; torpedo-boat destroyers *Beale*, *Jarvis*, *Cassin*, *Henley*, *Duncan*, *Cummings*; submarine torpedo boats *F-3*, *F-4*, *G-1*; fuel ships *Orion*, *Jason*, *Jupiter*, *Proteus*, *Nereus*; tugs *Ontario*, *Sonoma*.

Statement of data relative to trials and acceptances of vessels which have been preliminarily accepted and those finally accepted since the last annual report.

Name.	Type.	Date of trial.	Speed required by contract.	Speed obtained on trial.	Date of preliminary acceptance.	Date of final acceptance.	By whom built.
Arkansas.....	Battleship.....	1912. June 4	<i>Knots.</i> 20.5	<i>Knots.</i> 21.05	1912. Sept. 14		New York Shipbuilding Co.
Nebraska.....	do.....	1906. July 17	19	19.06	1907. May 31		Moran Bros. Co.
Utah.....	do.....	1911. July 2	20.75	21.04	1911. Aug. 30	1913. Nov. 1	New York Shipbuilding Co.
Wyoming.....	do.....	1912. July 19	20.5	21.22	1912. Sept. 23		Wm. Cramp & Sons.
Beale.....	Destroyer.....	to 22. June 25	29.5	29.65	Aug. 29	Oct. 15	Do.
Cassin.....	do.....	1913. June 26	29	30.14	1913. Aug. 8		Bath Iron Works.
Cummings.....	do.....	Aug. 27	29	30.57	Sept. 19		Do.
Drayton.....	do.....	1910. Oct. 14	29.5	30.83	1910. Oct. 29	July 7	Do.
Duncan.....	do.....	1913. July 5	29	29.14	1913. Aug. 30		Fore River Shipbuilding Co.
Fanning.....	do.....	1912. May 28	29.5	29.99	1912. June 20	Oct. 30	Newport News Shipbuilding Co.
Henley.....	do.....	Sept. 24	29.5	30.32	Dec. 5		Fore River Shipbuilding Co.
Jenkins.....	do.....	May 21	29.5	31.27	June 14	Mar. 13	Bath Iron Works.
Jouett.....	do.....	Apr. 30 to May 1	29.5	32.27	May 24	Mar. 26	Do.
Paulding.....	do.....	1910. Sept. 2	29.5	32.80	1910. Sept. 27	July 8	Do.
Perkins.....	do.....	Sept. 30	29.5	29.76	Nov. 15	May 31	Fore River Shipbuilding Co.
Sterett.....	do.....	Nov. 6	29.5	30.37	Dec. 12	May 10	Do.
Terry.....	do.....	Sept. 24	29.5	30.24	Oct. 12	1912. Nov. 18	Newport News Shipbuilding Co.
Trippe.....	do.....	1911. Feb. 21	29.5	30.89	1911. Mar. 21	1913. Aug. 4	Bath Iron Works.
Walke.....	do.....	Apr. 24	29.5	29.78	July 18	Aug. 21	Fore River Shipbuilding Co.

Statement of data relative to trials and acceptances of vessels which have been preliminarily accepted and those finally accepted since the last annual report—Continued.

Name.	Type.	Date of trial.	Speed required by contract.	Speed obtained on trial.	Date of preliminary acceptance.	Date of final acceptance.	By whom built.
Jarvis.....	Destroyer.....	1912. Sept. 18	Knots. 29.5	Knots. 30.01	1912. Oct. 21	1913.	New York Shipbuilding Co.
E-1.....	Submarine.....	1911. Nov. 15 to 22. Dec. 12 to 15.	.....	"	Feb. 14	Jan. 8	Fore River Shipbuilding Co.
E-2.....	do.....	Nov. 14 to 23. Dec. 11 to 15.	.....	"	Feb. 14	July 19	Fore River Shipbuilding Co.
F-1.....	do.....	1912. Apr. 5 to May 3.	.....	.....	June 19	May 2	Union Iron Works.
F-2.....	do.....	May 6 to 23.	.....	.....	June 25	Apr. 23	Do.
F-3.....	do.....	June 17 to July 10	.....	.....	Aug. 5	May 9	Seattle Con. & D. D. Co.
F-4.....	do.....	1913. Mar. 31 to Apr. 22	.....	.....	1913. May 2	.....	Moran Co.
G-1.....	do.....	1912. Sept. 3	.....	.....	1912. Oct. 28	Oct. 24	Newport News Co.
Neptune.....	Fuel ship.....	1911. July 27 to 29.	14	12.98	.....	1912. Oct. 3	Maryland Steel Co.
Jason.....	do.....	1913. June 18	14	14.32	1913. June 26	.....	Do.
Jupiter.....	do.....	.....	14	.....	¹ Apr. 7	.....	Government.
Nereus.....	do.....	Sept. 3 and 4	14	14.58	Sept. 10	.....	Newport News Shipbuilding Co.
Proteus.....	do.....	June 27	14	14.67	July 5	.....	Do.
Orion.....	do.....	1912. July 10 to 12.	14	14.47	1912. July 24	.....	Maryland Steel Co.
Ontario.....	Tug.....	Aug. 12 to 17.	14	13.23	² Sept. 3	.....	New York Shipbuilding Co.
Sonoma.....	do.....	Aug. 12 to 17.	14	13.08	² Sept. 5	.....	Do.

¹ Date of commission.

² Conditionally.

Vessels dropped from the Navy since June 30, 1912.

Name.	Type.	Status.	Stricken from the Navy Register—Disposition.	Appraised value.
Jamestown.....	Unserviceable.....	Regular Navy.....	Sept. 4, 1912.....	\$2,500
Rowan.....	Torpedo boat.....	do.....	Oct. 29, 1912.....	2,850
Porter.....	do.....	do.....	Nov. 7, 1912.....	3,000
Wabash.....	Unserviceable.....	do.....	Nov. 15, 1912.....	.....
Nipsic.....	do.....	do.....	Dec. 11, 1912.....	2,000
Puritan.....	Monitor.....	do.....	Feb. 27, 1913.....	12,000
A-1.....	Submarine.....	do.....	Mar. 3, 1913.....	800
Chickasaw.....	Tug.....	do.....	Apr. 9, 1913.....	1,000
Manila.....	Unserviceable.....	do.....	May 7, 1913.....	10,000
Newark.....	Cruiser.....	do.....	June 28, 1913.....	50,000
Alexander.....	Fuel ship.....	do.....	Aug. 16, 1913.....	.....
Independence.....	Unserviceable.....	do.....	Sept. 3, 1913.....	.....
Restless.....	Yacht.....	do.....	Sept. 5, 1913.....	2,000
Craven.....	Torpedo boat.....	do.....	Nov. 14, 1913.....	.....
Stockton.....	do.....	do.....	do.....	.....
Wilkes.....	do.....	do.....	do.....	.....
Stringham.....	do.....	do.....	Nov. 26, 1913.....	.....

Vessels building for the increase of the Navy are listed in the following tables, which include all those authorized by law, with the exception of 1 transport, 1 supply ship, and 4 submarine boats appropriated for by the last Congress.

Vessels building under contract.

Name.	By whom building.	Estimate of—		Contract time.	Expiration of contract time.
		Degree of completion Nov. 1, 1913.	Probable date of completion.		
BATTLESHIPS.					
Texas.....	Newport News Shipbuilding Co.	Per cent. 96.0	Jan. 17, 1914	Months. 36	Dec. 17, 1913
Nevada.....	Fore River Shipbuilding Co.	49.2	Aug. 13, 1915	36	Jan. 22, 1915
Oklahoma.....	New York Shipbuilding Co.	48.7	Aug. 19, 1915	36	Do.
Pennsylvania.....	Newport News Shipbuilding Co.	11.8	Apr. 21, 1916	36	Feb. 28, 1916
GUNBOAT.					
Sacramento.....	Wm. Cramp & Sons.....	54.4	Sept. 12, 1914	21	June 9, 1914
TORPEDO-BOAT DESTROYERS.					
Downes.....	New York Shipbuilding Co.	81.7	May 20, 1914	24	Sept. 8, 1913
Aylwin.....	Wm. Cramp & Sons.....	97.4	Nov. 16, 1913	22½	July 22, 1913
Parker.....	do.....	95.2	Dec. 1, 1913	23	Aug. 7, 1913
Benham.....	do.....	93.0	Dec. 16, 1913	23½	Aug. 22, 1913
Balch.....	do.....	92.6	do.....	24	Sept. 7, 1913
O'Brien.....	do.....	14.9	Mar. 19, 1915	23	Nov. 7, 1914
Nicholson.....	do.....	13.6	Apr. 4, 1915	23½	Nov. 22, 1914
Winslow.....	do.....	14.2	Mar. 25, 1915	24	Dec. 7, 1914
McDougal.....	Bath Iron Works.....	34.3	Sept. 19, 1914	21	Sept. 16, 1914
Cushing.....	Fore River Shipbuilding Co.	21.3	Mar. 1, 1915	24	Dec. 11, 1914
Ericsson.....	New York Shipbuilding Co.	15.1	Mar. 24, 1915	24	Dec. 16, 1914
No. 57.....	Fore River Shipbuilding Co.	0.0	Sept. 22, 1915	24	Sept. 22, 1915
No. 58.....	Wm. Cramp & Sons.....	0.0	Sept. 17, 1915	24½	Sept. 17, 1915
No. 59.....	do.....	0.0	Oct. 2, 1915	24	Oct. 2, 1915
No. 60.....	Bath Iron Works.....	0.0	Oct. 15, 1915	24	Oct. 15, 1915
No. 61.....	New York Shipbuilding Co.	0.0	do.....	24	Do.
No. 62.....	do.....	0.0	do.....	24	Do.
SUBMARINE TORPEDO BOATS.					
G-4.....	Wm. Cramp & Sons.....	96.4	May 3, 1914	30	Oct. 24, 1911
G-2.....	Newport News Shipbuilding Co.	89.7	July 24, 1914	28	Aug. 21, 1911
H-1.....	Union Iron Works.....	97.9	Nov. 25, 1913	29	Jan. 10, 1913
H-2.....	do.....	97.9	do.....	29	Do.
H-3.....	The Moran Co.....	98.0	Dec. 4, 1913	30	Feb. 10, 1913
G-3.....	Lake Torpedo Boat Co.	74.2	May 10, 1914	20	Sept. 19, 1912
K-1.....	Fore River Shipbuilding Co.	94.0	Jan. 15, 1914	25	June 30, 1913
K-2.....	do.....	91.8	Feb. 18, 1914	25	Do.
K-3.....	Union Iron Works.....	88.6	Dec. 18, 1913	26	July 30, 1913
K-4.....	The Moran Co.....	88.0	Mar. 30, 1914	27	Aug. 30, 1913
K-5.....	Fore River Shipbuilding Co.	79.3	June 21, 1914	24	Oct. 27, 1913
K-6.....	do.....	78.3	July 6, 1914	25	Nov. 27, 1913
K-7.....	Union Iron Works.....	78.5	Mar. 6, 1914	26	Dec. 27, 1913
K-8.....	do.....	76.4	Apr. 27, 1914	27	Jan. 27, 1914
L-1.....	Fore River Shipbuilding Co.	13.0	Mar. 19, 1915	22	Dec. 1, 1914
L-2.....	do.....	13.0	Apr. 13, 1915	23	Jan. 1, 1915
L-3.....	do.....	13.0	May 4, 1915	24	Feb. 1, 1915
L-4.....	do.....	13.0	May 22, 1915	25	Mar. 1, 1915
L-5.....	Lake Torpedo Boat Co.	7.4	June 18, 1915	24	Mar. 15, 1915
L-6.....	Craig Shipbuilding Co.	0.0	Mar. 15, 1915	24	Do.
L-7.....	do.....	0.0	Apr. 15, 1915	25	Apr. 15, 1915
M-1.....	Fore River Shipbuilding Co.	9.7	July 10, 1915	26	Apr. 1, 1915
DESTROYER TENDER.					
Melville.....	New York Shipbuilding Co.	10.0	June 20, 1915	24	June 20, 1915
SUBMARINE TENDERS.					
Fulton.....	New London Ship & Engine Co.	23.4	June 19, 1914	24	June 19, 1914
Bushnell.....	Seattle Construction Co.	3.0	Mar. 30, 1915	21	Mar. 30, 1915

Vessels building at navy yards.

Name.	Where building.	Estimate of—		Con- struc- tional period.	Expiration of construc- tional period
		Degree of com- pletion Nov. 1, 1913.	Probable date of com- pletion.		
BATTLESHIPS.					
New York.....	Navy yard, New York, N. Y....	92.0	May 1, 1914	36	May 1, 1914
Number 39.....	do.....	0.0			
GUNBOATS.					
Mormeacy.....	Navy yard, Mare Island, Cal..	99.0			
Palos.....	do.....	100.0			
FUEL SHIPS					
Kanawha.....	Navy yard, Mare Island, Cal....	9.4			
Maumee.....	do.....	5.3			

VESSELS LAUNCHED SINCE JUNE 30, 1912.

The following is a list of vessels launched since June 30, 1912, together with the date of launching:

Name.	Launched.	Name.	Launched.
G-4.....	Aug. 15, 1912	Nereus.....	Apr. 26, 1913
Jupiter.....	Aug. 24, 1912	H-1.....	May 6, 1913
Proteus.....	Sept. 14, 1912	Cassin.....	May 20, 1913
New York.....	Oct. 30, 1912	H-2.....	June 4, 1913
Jason.....	Nov. 16, 1912	H-3.....	July 3, 1913
Aylwin.....	Nov. 23, 1912	Cummings.....	Aug. 6, 1913
Baleh.....	Dec. 21, 1912	K-1.....	Sept. 3, 1913
Parker.....	Feb. 8, 1913	K-2.....	Oct. 4, 1913
Benham.....	Mar. 22, 1913	Downes.....	Nov. 8, 1913
Duncan.....	Apr. 5, 1913		

NEW VESSELS AUTHORIZED.

BATTLESHIPS.

The plans and specifications for first-class battleship No. 38, *Pennsylvania*, authorized by act of Congress approved August 22, 1912, were completed and circular signed by the Assistant Secretary of the Navy December 18, 1912, and issued to the bidders upon request after December 20, 1912.

The general dimensions and features of the vessel are as follows:

Length on designer's water line.....	600 feet.
Length over all.....	608 feet.
Breadth, extreme, at designer's water line.....	97 feet $\frac{1}{2}$ inch.
Mean trial displacement.....	31,400 tons.
Mean draft to bottom of keel at trial displacement (about).....	28 feet 10 inches.
Total fuel-oil storage.....	2,322 tons.
Fuel oil carried on trial.....	1,548 tons.
Feed water carried on trial.....	209 tons.
Speed on trial, not less than.....	21 knots.

Armament:

Main battery—

Twelve 14-inch 45 caliber breech-loading rifles.

Four submerged torpedo tubes.

Secondary battery—

Twenty-two 5 inch. 51 caliber rapid-fire guns.

Four 3-pounder saluting guns.

Two 1-pounder guns for boats.

Two 3-inch fieldpieces.

Two .30-caliber machine guns.

Bids for the construction of battleship No. 38, *Pennsylvania*, were opened at the department February 18, 1913.

Proposals received for the construction of battleship No. 38, "Pennsylvania."

[Class 1: Hull and equipment and reciprocating machinery, department's plans. Class 2: Hull and equipment, department's plans; machinery, bidder's design.]

Bidder.	Class 1.	Class 2.	Time.	Speed.	Type of propelling machinery.
			<i>Months.</i>	<i>Knots.</i>	
New York Shipbuilding Co.	\$7,375,000	-----	36	21	Department's plans of propelling machinery and boilers.
Do.....		\$7,352,000	36	21	4-shaft Parsons turbines with geared cruising turbines; B. & W. or Express boilers. ¹
Do.....		7,396,000	36	21	Curtis turbines with geared cruising turbines; Express boilers. ²
Newport News Shipbuilding & Dry Dock Co.		7,295,000	36	21	Parsons turbines with 4 shafts and with geared cruising turbines; Express boilers.
Do.....		7,275,000	36	21	Same as above.
Do.....		7,260,000	36	21	Curtis turbines with 4 shafts and with geared cruising turbines; Express boilers.
Do.....		7,235,000	36	21	Curtis turbines with 4 shafts and without geared cruising turbines; Express boilers.
Fore River Shipbuilding Co.		7,312,000	36	21	4 shafts, with 4 engine rooms, and Curtis turbines; Yarrow boilers.
Wm. Cramp & Sons Ship & Engine Building Co.	7,399,000	-----	36	21	Two 4-crank, triple-expansion engines, twin screw, water-tube boilers.
Do.....		7,249,000	36	21	4 shafts, Parsons turbines, water-tube boilers.

¹ Outboard shafts, port and starboard, each contain gear cruising forward, low power, and astern aft. Inboard shafts, port and starboard, each contain high power ahead forward and high power astern aft.

² Outboard shafts, port and starboard, have one high-power and one low-power cruising and one main low-power ahead and astern turbine. Inboard shafts, port and starboard, have one main high-power ahead and one high-power astern turbine.

Contract for battleship No. 38, *Pennsylvania*, was signed with the Newport News Shipbuilding & Dry Dock Co., Newport News, Va., on February 28, 1913, at a price of \$7,260,000; to have the bidder's design of Curtis turbines, 4-shaft, installed, and to be completed within 36 months.

BATTLESHIP NO. 39.

First-class battleship No. 39, authorized by act of Congress approved March 4, 1913, was designated to be built in a navy yard. The navy yard, New York, N. Y., has been designated as the yard at which this vessel will be built. This vessel is a duplicate of battleship No. 38, *Pennsylvania*, except propelling machinery. Propelling machinery of the Parson's type will be installed.

DESTROYER TENDER NO. 2, "MELVILLE."

The type plans for destroyer tender No. 2, *Melville*, authorized by act of Congress approved August 22, 1912, were completed and circular signed by the Acting Secretary of the Navy February 15, 1913, and issued to bidders upon request thereafter.

Bids for the construction of destroyer tender No. 2, *Melville*, were opened at the department April 21, 1913.

Proposal received for the construction of destroyer tender No. 2, "Melville."

[Class 1: Bidder's design of hull, with steam turbines and reduction gears. Class 2: Bidder's design of hull, fittings, machinery, outfits, and equipments.]

Bidder.	Class 1.	Class 2.	Months to complete.	Speed.	Type of propelling machinery.
New York Shipbuilding Co...	¹ \$1,310,000	-----	24	<i>Knots.</i> 15	Parson's geared turbines.
Do.....	² 1,260,000	-----	24	15	Do.

¹ The vessel complete, including machine tools and shop outfit furnished and installed by the contractors.

² The vessel complete, including the installation of the tools and shop outfit to be supplied by the Government.

Contract for destroyer tender No. 2, *Melville*, was signed with the New York Shipbuilding Co., Camden, N. J., on June 20, 1913, at a price of \$1,310,000; to have the bidder's design of Parson's geared turbines installed, and to be completed within 24 months. Tools and shop outfit to be furnished and installed by the contractors.

The general characteristics of the vessel under contract are as follows:

Length between perpendiculars, 400 feet.

Length over all, 417 feet 3 inches.

Beam, molded, 54 feet 3 inches.

Depth, molded, 36 feet 6 inches.

Trial displacement, 7,150 tons.

Draft, mean, on trial (about), 20 feet.

Battery: Eight 5-inch rapid-fire guns; two 3-pounder saluting guns; one 5.2 meter by 45 centimeter twin torpedo tube.

SUBMARINE TENDER NO. 2, "BUSHNELL."

The type plans for submarine tender No. 2, *Bushnell*, authorized by act of Congress approved August 22, 1912, were completed and circular signed by the Acting Secretary of the Navy March 13, 1913, and issued to bidders upon request thereafter.

Bids for the construction of submarine tender No. 2, *Bushnell*, were opened at the department May 19, 1913.

Proposals received for the construction of submarine tender No. 2, "Bushnell."

[Class 1: Bidder's design of hull, with steam turbines and reduction gears. Class 2: Bidder's design of hull, fittings, machinery, outfits, and equipments, the type of propelling machinery being either internal combustion or steam driven.]

Bidder.	Class 1.	Class 2.	Months to complete.	Speed.	Type of propelling machinery.
Seattle Construction & Dry Dock Co.	¹ \$935,695 ² 918,893	-----	21	<i>Knots.</i> 14	Geared turbines.
Do.....		¹ \$938,010 ² 921,208	21	14	1 reciprocating engine.
Fore River Shipbuilding Co..	¹ 942,000 ² 930,000	-----	21	14	{ Curtis turbine driving shaft through double-reduction gear.
New London Ship & Engine Co.		¹ 987,000 ² 972,000	30	14	{ Main engines, Diesel single-acting 2 cycle reversible. Auxiliary engines, Diesel single-acting 4 cycle.

¹ The vessel complete, including machine tools and shop outfit furnished and installed by the contractor.

² The vessel complete, including the installation of tools and shop outfit to be supplied by the Government.

Contract for submarine tender No. 2, *Bushnell*, was signed with the Seattle Construction & Dry Dock Co., Seattle, Wash., on June 30, 1913, at a price of \$935,695; to have the bidder's design of geared turbines installed, and to be completed within 21 months. Tools and shop outfit to be furnished and installed by the contractors.

The general characteristics of the vessel under contract are as follows:

Length between perpendiculars.....	300 feet.
Length over all.....	350 feet 6 inches.
Breadth.....	45 feet 6 inches.
Depth to upper deck.....	28 feet.
Mean trial displacement.....	3,580 tons.
Draft at mean trial displacement (about).....	15 feet.
Battery:	
Four 5-inch rapid-fire guns.	
Two 3-pounder saluting guns.	
One twin deck torpedo tube.	

FUEL SHIPS NOS. 13 AND 14.

The plans and specifications for fleet oilers (fuel ships) No. 13, *Kanawha*, and No. 14, *Maumee*, authorized by act of Congress approved August 22, 1912, designated to be built in navy yards, have been completed.

The general dimensions and features of the vessels are as follows:

Length between perpendiculars.....	455 feet.
Length over all.....	475 feet 7½ inches.
Breadth, molded.....	56 feet.
Mean trial displacement.....	14,500 tons.
Mean draft to bottom of keel.....	26 feet 2 inches.
Designed speed, full load.....	14 knots.
Bunker capacity, fuel oil.....	1,568 tons.
Cargo capacity, fuel oil.....	7,554 tons.

The navy yard, Mare Island, Cal., has been designated as the yard at which fuel ships No. 13, *Kanawha*, and No. 14, *Maumee*, will be built. Fuel ship No. 13, *Kanawha*, to be equipped with reciprocating propelling machinery, and fuel ship No. 14, *Maumee*, to be equipped with internal combustion propelling machinery.

DESTROYERS NOS. 51-56

The plans and specifications for torpedo-boat destroyers *Nos. 51 to 56*, authorized by act of Congress approved August 22, 1912, were completed and circular signed by the Acting Secretary of the Navy August 24, 1912, and issued to the bidders upon request thereafter.

The general dimensions and features of each vessel are as follows:

Length on designer's water line.....	300 feet.
Breadth molded extreme.....	30 feet 6 inches.
Mean trial displacement.....	1,050 tons.
Mean draft to bottom of keel at mean trial displacement (about).....	9 feet 5½ inches.
Total fuel-oil capacity.....	309 tons.
Fuel oil carried on speed trial.....	206 tons.
Feed water carried on trial.....	12 tons.
Speed on trial, not less than.....	29 knots.

Battery:

Four 4-inch guns.

Four 5.2-meter by 45-centimeter deck twin torpedo tubes.

Bids for the construction of torpedo-boat destroyers *Nos. 51 to 56* were opened at the department November 18, 1912.

Proposals received for the construction of torpedo-bont destroyers Nos. 51-56, "O'Brien," "Nicholson," "Winslow," "McDougal," "Cushing," and "Ericsson."

[Class 1: Hull and machinery, department's plans; Class 2: Department's design, with cruising turbines and reduction gearing; Class 3: Hull and equipment, department's plans; turbine machinery, bidder's design.]

Bidders.	Class 1.			Class 2.		Class 3.		Months to complete.	Speed.	Type of propelling machinery.
	One vessel.	Two vessels.	Three vessels.	One vessel.	Two vessels.	One vessel.	Two vessels.			
Bath Iron Works.....	\$862,000					\$810,000		24	29	Department's design. Exact duplicate of destroyers Nos. 43-44. Westinghouse turbine; reciprocating engine; Thornycroft boilers. Curtis turbine and reciprocating engines; Yarrow boilers. Curtis turbine; Yarrow boilers. Parsons turbines and reciprocating engines. Parsons main turbine and Parsons geared cruising turbine. Curtis turbine and reciprocating engine. Parsons turbine and reciprocating engine. Parsons turbine with impulsive initial state or Curtis marine turbine. Department's design.
Do.....		\$381,500						21	30½	
Union Iron Works.....								24	30	
Fore River Shipbuilding Corporation ..	854,500							24	29	
Do.....				\$854,500				24	29	
New York Shipbuilding Co.....	875,000			870,000				24	29	
Do.....								24	29	
Do.....								24	29	
Newport News Shipbuilding & Dry Dock Co.....	894,000					873,500		24	29	
Do.....						873,500		24	29	
Seattle Construction & Dry Dock Co.....	938,000	881,500						24	29	{ Impulse turbine and reciprocating engine; Express curved tube boilers.
Do.....		938,000 (each).						24	29	
Wm. Cramp & Sons, Ship & Engine Building Co.....	1 870,000							24	29	
Do.....		1 855,000 (each).						26	29	
Do.....			1 \$846,900 (each).					24	29	

1 Delaware Breakwater course, deduct \$4,900 from the price stated for each vessel.

Contracts for torpedo boat destroyers No. 51, *O'Brien*, No. 52, *Nicholson*, and No. 53, *Winslow*, were signed with the Wm. Cramp & Sons Ship & Engine Building Co., Philadelphia, Pa., on December 7, 1912, at a price of \$842,000 each; to have the Cramp type of impulse turbine propelling machinery installed, with reciprocating engines for cruising purposes, and to be completed within 23, 23½, and 24 months, respectively.

Contract for torpedo boat destroyer No. 54, *McDougal*, was signed with the Bath Iron Works, Bath Me., on December 16, 1912, at a price of \$810,000; to have the bidder's design of Parson's turbine propelling machinery installed, with reciprocating engines for cruising purposes, and to be completed within 21 months. The vessel to be a duplicate of *Cassin* and *Cummings*, with changes to date of tender.

Contract for torpedo boat destroyer No. 55, *Cushing*, was signed with the Fore River Shipbuilding Co., Quincy, Mass., on December 11, 1912, at a price of \$854,500; to have Curtis turbine propelling machinery installed, with speed-reduction gearing fitted between cruising turbine and the propeller shafts, and to be completed within 24 months.

Contract for torpedo boat destroyer No. 56, *Ericsson*, was signed with the New York Shipbuilding Co., Camden, N. J., on December 16, 1912, at a price of \$873,500; to have the bidders' design of Parson's turbine propelling machinery installed, with reciprocating engines for cruising purposes, and to be completed within 24 months.

DESTROYERS NOS. 57 TO 62

The plans and specifications for torpedo boat destroyers *Nos. 57 to 62*, authorized by act of Congress approved March 4, 1913, were completed and circular signed by the Secretary of Navy May 20, 1913, and issued to bidders upon request thereafter.

The general dimensions and features of each vessel are as follows:

Length on designer's water line.....	310 feet.
Length over all.....	315 feet 3 inches.
Breadth, molded, extreme.....	29 feet 10 inches.
Mean trial displacement.....	1,090 tons.
Mean draft to bottom of keel at mean trial displacement.....	9 feet 4½ inches.
Total fuel-oil capacity.....	290 tons.
Speed on trial not less than.....	29½ knots.
Battery:	
Four 4-inch rapid-fire guns.	
Four 21-inch twin torpedo tubes (deck).	

Bids for the construction of torpedo boat destroyers *Nos. 57 to 62* were opened at the department August 4, 1913.

Proposals received for the construction of torpedo boat destroyers "Nos. 57" to "62."

[Class 1: Hull, equipment, and turbine propelling machinery, with speed-reduction gearing, department's plans. Class 2: Hull and equipment, department's plans; turbine propelling machinery, bidder's design.]

Bidders.	Class 1.		Class 2.		Months to complete.	Speed.	Type of propelling machinery.
	One vessel.	Two vessels.	One vessel.	Two vessels.			
New York Shipbuilding Co. ¹	\$887,000	\$848,000 (each).			24	<i>Knots.</i>	Parson's impulse reaction with two geared cruising turbines; Thornycroft express boilers.
Do					24½		1 high-pressure and 1 low-pressure Parson's turbines with one geared cruising turbine; Thornycroft express boilers.
Do			\$859,000		24		1 high-pressure and 1 low-pressure Parson's turbines, direct driven, geared on each shaft; Thornycroft express boilers.
Do				\$825,000 (each).	24		Curtis impulse reaction turbines with two geared cruising turbines; Thornycroft express boilers.
Do			\$76,000		24		Westinghouse turbine; Thornycroft boilers.
Do			905,000		24		Parson's impulse reaction turbines, both main and cruising; Normand boilers.
Union Iron Works.	906,000				24		Parson's all-geared turbines; Normand boilers.
Bath Iron Works.	921,000				24		Duplicate of destroyer "No. 54" (McDougal), but without cruising expansions in high-pressure turbine; Normand boilers.
Do			884,000		24		Duplicate of destroyer "No. 54" (McDougal), but without cruising expansions in high-pressure turbine; Normand boilers.
Do			\$73,000		23		Duplicate of destroyer "No. 54" (McDougal), but without cruising expansions in high-pressure turbine; Normand boilers.
Do			866,000		23		Duplicate of destroyer "No. 54" (McDougal), but without cruising expansions in high-pressure turbine; Normand boilers.
Do			832,000		22		Duplicate of destroyer "No. 54" (McDougal), but without cruising expansions in high-pressure turbine; Normand boilers.
Do			825,000		22		Duplicate of destroyer "No. 54" (McDougal), but without cruising expansions in high-pressure turbine; Normand boilers.
Wm. Cramp & Sons.		888,000 (each).			23½		Cramp's impulse turbines; express boilers.
Do					24		Parson's reaction turbines; express boilers.
Newport News Ship Building & Dry Dock Co.	924,500			\$81,000 (each).	23½		Parson's or Curtis turbines.
Do					24		Twin-screw Curtis turbines with cruising turbines operating through reduction gearing at speeds up to 20 knots; Yarrow boilers.
Fore River Ship Building Corporation.	861,000	902,500 (each).			24		

¹ New York Shipbuilding Co.'s bids based on trial on Delaware Breakwater.

² If the progressive trial over the Delaware Breakwater, etc., deduct \$3,000 from each vessel.

Contract for torpedo-boat destroyer *No. 57* was signed with the Fore River Shipbuilding Corporation, Quincy, Mass., on September 22, 1913, at a price of \$861,000; to have the bidder's design of Curtis turbine propelling machinery installed, with cruising turbines operating through speed-reduction gearing, and to be completed within 24 months.

Contracts for torpedo-boat destroyers *Nos. 58 and 59* were signed with the Wm. Cramp & Sons Ship & Engine Building Co., Philadelphia, Pa., on October 2, 1913, at a price of \$381,000 each; to have the bidder's design of Parsons reaction turbine propelling machinery installed, and to be completed within 23½ and 24 months, respectively.

Contract for torpedo-boat destroyer *No. 60* was signed with the Bath Iron Works (Ltd.), Bath, Me., on October 15, 1913, at a price of \$884,000; to have the bidder's design of Parsons all geared turbine propelling machinery installed, and to be completed within 24 months.

Contracts for torpedo-boat destroyers *Nos. 61 and 62* were signed with the New York Shipbuilding Co., Camden, N. J., on October 15, 1913, at a price of \$825,000 each; to have the bidder's design of Parsons turbine propelling machinery installed, with one geared cruising turbine, and to be completed within 24 months.

SUBMARINES NOS. 40 TO 47

Circular defining the chief characteristics of submarine torpedo boats *Nos. 40 to 47*, inclusive (*L-1, L-2, L-3, L-4, L-5, L-6, L-7*, and *M-1*), authorized by act of Congress approved August 22, 1912, was signed by the Acting Secretary of the Navy October 2, 1912, and issued to bidders upon request thereafter.

Bids for the construction of these vessels were opened at the department December 6, 1912, and contracts were awarded as follows:

Contracts for submarines *Nos. 40, 41, 42, and 43* (*L-1, L-2, L-3, and L-4*) were signed with the Electric Boat Co., Groton, Conn., on February 1, 1913, at a price of \$478,000 each, to be completed within 22, 23, 24, and 25 months, respectively.

Contract for submarine *No. 44* (*L-5*) was signed with the Lake Torpedo Boat Co., Bridgeport, Conn., on March 15, 1913, at a price of \$535,000; to be completed within 24 months.

Contracts for submarines *Nos. 45 and 46* (*L-6 and L-7*) were signed with the Lake Torpedo Boat Co., Bridgeport, Conn., on March 15, 1913, at a price of \$560,000 each; to be completed within 24 and 25 months, respectively.

Contract for submarine *No. 47* (*M-1*) was signed with the Electric Boat Co., Groton, Conn., on February 4, 1913, at a price of \$615,000; to be completed within 26 months.

SUBMARINES NOS. 48 TO 51.

Circular defining the chief characteristics of submarine torpedo boats *Nos. 48 to 51*, inclusive, authorized by act of Congress approved March 4, 1913, was signed by the Acting Secretary of the Navy September 18, 1913, and issued to bidders upon request thereafter.

Bids for the construction of these vessels will be opened at the department December 2, 1913.

TRANSPORT AND SUPPLY SHIP.

The plans and specifications for transport *No. 1* and supply ship *No. 1*, authorized by act of Congress approved March 4, 1913, were completed and circulars signed by the Assistant Secretary of the Navy October 4, 1913, and issued to bidders upon request after October 15, 1913.

Bids for the construction of transport *No. 1* and supply ship *No. 1* will be opened at the department December 20, 1913.

The general dimensions and features of transport *No. 1* are as follows:

Length between perpendiculars.....	460 feet.
Length over all.....	482 feet 9½ inches.
Beam, molded.....	60 feet 10½ inches.
Depth at midlength, at side, molded.....	39 feet 3¼ inches.
Mean trial displacement.....	10,000 tons.
Draft, at mean trial displacement (about).....	19 feet 10½ inches.
Speed.....	14 knots.

The general dimensions and features of supply ship *No. 1* are as follows:

Length between perpendiculars.....	400 feet.
Length over all.....	422 feet 11 inches.
Beam, molded.....	55 feet.
Mean trial displacement.....	8,500 tons.
Draft at mean trial displacement (about)	20 feet 8 inches.

WRECKING PONTOON FOR SUBMARINES.

No tenders within the limit of appropriation have been received for the submarine wrecking pontoon authorized by act of Congress approved March 4, 1913. Bids were originally invited for opening of June 24, but upon requests from a prospective bidder the opening was twice postponed, namely, until July 24 and finally until September 15, 1913. Modified characteristics are in course of preparation with a view to readvertising, when it is hoped to get a pontoon of satisfactory type with the funds available.

* * * * *

Respectfully,

R. M. WATT,
Chief Constructor, United States Navy,
Chief of Bureau.

The SECRETARY OF THE NAVY.

REPORT OF THE CHIEF OF THE BUREAU OF STEAM
ENGINEERING.NAVY DEPARTMENT,
BUREAU OF STEAM ENGINEERING,
Washington, D. C., October 1, 1913.

The appropriations made for the support of the bureau were:

Bureau of Steam Engineering:	
Steam machinery	\$6, 256, 000. 00
Engineering Experiment Station, Annapolis, Md., experimental and research work	40, 000. 00
Machinery plant, naval station, Pearl Harbor, Hawaii	300, 000. 00
Salaries, Bureau of Steam Engineering	26, 380. 00
Allotments made by the department for work under this bureau chargeable to appropriations made for the Bureau of Equipment:	
Equipment of vessels	1, 680, 000. 00
Coal and transportation	450, 000. 00
Contingent, Bureau of Equipment	2, 000. 00
Salaries, Bureau of Equipment	17, 000. 00
Funds available under joint appropriations:	
Increase of Navy, construction and machinery	9, 846, 205. 00
Increase of Navy, torpedo boats	2, 521, 647. 00
Increase of Navy, colliers	581, 321. 48

MACHINERY OF THE FLEET.

The upkeep of the machinery of the fleet is always a matter of first consideration, and in a fleet whose machinery aggregates nearly 2,000,000 horsepower it is to be expected that at one time or another some of the vessels will be out of service on account of defects or derangement of machinery, but it is gratifying to be able to report that the machinery of the fleet as a whole is in excellent condition, and that this applies to the vessels of both the active and the reserve fleets. The maintenance of the machinery of this fleet in such good condition is due in no small measure to the stimulus of engineering competition, to the practice of having regular overhaul periods for ships, and to the economical and efficient work done in the machinery division of the navy yards, without which it would not have been possible to keep the machinery of such a large fleet in good condition on an appropriation actually less than was available for a fleet of little more than one-half the power five years ago.

The turbine reduction-gear machinery of the *Neptune* has been continued in service while waiting for the completion of a new set which the contractors will install. The reduction gear has proven quite satisfactory.

The *Yorktown* has completed a general overhauling, including the installation of new boilers, and new boilers have been installed in several tugs and colliers. The usual retubing of boilers and condensers has been carried out, and considerable work has been done in the manufacture of propellers and propeller blades.

A number of alterations have been made tending to improve the machinery of vessels of the fleet, the most important being the installation of turbine driven blowers to replace old ones driven by worn-

out reciprocating engines, and improvements in the method of introducing boiler feed water.

The work of converting the *Vestal* into a repair ship is practically completed, and similar work on the *Prometheus* is well under way.

DESIGN OF MACHINERY.

Plans and specifications were prepared for the machinery of the battleships *Pennsylvania* and *No. 39*, for torpedo destroyers *Nos. 51 to 56*, inclusive, for the destroyer tender *Melville*, and the submarine tender *Bushnell*, contracts for which have been awarded. Plans were also prepared for the machinery of the collier *Kanawha*, building at Mare Island.

Contract has been entered into for plans for the heavy oil engines of the *Maumee*, a sister ship of the *Kanawha*, and it is expected that the work of constructing these engines will soon begin at the New York Navy Yard. These engines will be built under the special authorization given in the last naval appropriation bill, and their construction and installation should contribute greatly to our knowledge of this type of engine and its possibilities for use for the large power required in battleships.

The design of a type of engine for colliers and vessels of that type has been undertaken, and the engines of the *Kanawha*, mentioned above, are based on this design.

The electrical propelling machinery of the *Jupiter*, at the date of this report, is ready for trial, and the results of the experience with it are expected to furnish valuable information regarding the adaptability of this type of machinery for naval vessels. Being the first installation of the kind on such a large scale, the trials will be watched with great interest by marine engineers in general, and it is hoped that the experiment may be of such a satisfactory character as to justify the further installation of this type of machinery.

The use of oil as fuel has continued, and all the latest designs of battleships, as well as destroyers, provide for the use of oil only. The admirable work carried out at the oil-fuel-testing plant, Philadelphia, has been productive of much valuable information on the subject of oil burning, and, supplemented by the experience in destroyers, has resulted in the development of an oil burner and air register which have given excellent results in service from an economic standpoint, and have effected a marked improvement in smoke reduction.

Some improvements have been made in the design of bureau type gasoline engines which have contributed to efficiency of operation and have also resulted in reducing the cost of manufacture.

NEW CONSTRUCTION.

Work on the machinery for the battleship *New York* has proceeded in a most satisfactory manner at the New York Navy Yard, and its installation is now in progress. The only other yard where the construction of machinery is now carried on is Mare Island. There the machinery of the river gunboats *Monocacy* and *Palos* is well advanced, and that of the collier *Kanawha* only recently begun.

ELECTRICAL WORK.

The operations of the Electrical Division of the bureau have been extensive, especially in the development of new and efficient lighting and wiring appliances, and in improvements in the general wiring throughout the ships, for which plans have recently been prepared. In addition, specifications covering the electrical work for all of this year's building program have been prepared, and type plans for their electrical systems either have been issued or are in course of preparation.

Thorough consideration has been given the subject of improving the lighting and wiring of ships, with the result that leaded and armored conductors have been adopted instead of plain conductors run in conduit, and that lighting fixtures have undergone complete redesign. In the consideration of this subject the bureau enlisted the cooperation of the foremost lighting engineers of the country, whose suggestions were given the fullest consideration, and it is believed that the progress which has already been made will result in greatly improving the lighting conditions on board ship.

The efforts that have been made to reduce the cost of searchlight mirrors by purchasing them in quantity sufficient to meet the demands of the fleet for a period of time have not only effected this purpose, but have also resulted in the production of mirrors in this country which it is confidently expected will be equal in efficiency to those formerly purchased abroad. This is a matter of no small military importance, but as it is accompanied by a marked reduction in cost, the commercial aspect of the case is none the less gratifying.

The number of searchlights on all battleships has been reduced from 16 to 8, and those which have been removed from ships having 16 searchlights will be used in bringing other battleships' and destroyers' searchlight equipment up to what is considered the standard. All of the older destroyers are to be modified by the installation of larger searchlights than they now carry.

Storage-battery material has been purchased as necessary for replacements of batteries on all the older types of submarines. A sufficient number of spare parts for these vessels has been purchased and will be held in store in order to enable repairs to be made without waiting for the delivery of material which would necessarily have to be advertised and take considerable time in delivery. When storage-battery material now available and due under contract has been used for overhauling these vessels as contemplated it is believed that all batteries of the older boats will be in efficient operating condition.

RADIOTELEGRAPHY.

Improvement in the radio equipment of the fleet has been especially marked during the past year. More careful control and the extended use of radio for signaling, especially in the Atlantic Fleet, have resulted in the development of clearer ideas as to the ultimate value of radiotelegraphy for military purposes. A sufficient number of modern high-frequency radio sets have been contracted for to modernize the installation on all the modern battleships, the armored

cruisers, and the other more important vessels, and it is expected that this work will be practically completed during the present fiscal year. The rapid development of radio for battle use will render necessary a readjustment of the installations on all battleships, and this work will require another year for its completion.

The high-power radio station at Arlington has been in successful operation, and is now used not only for communication with other naval radio stations but as a time-signal station from which time is sent broadcast twice daily, and for the conduct of a large volume of official business.

Contracts have been awarded for the construction of the high-power station on the Panama Canal Zone, to be known as the Darien station, which it is expected will be completed early in 1914. The next station of this chain will be erected on the California coast, its exact location being now under consideration. These stations are expensive of construction, but will prove of great value not only as military radio stations but for the dissemination of storm warnings and time signals for the fleet and for shipping in general.

Radiotelegraphy being still in a stage of development, progress is rapid and changes costly, and therefore it has not been possible to keep all the coastal stations supplied with modern equipment, but effort in this direction has been applied only to the more important stations. Those which are maintained for purely local purposes, such as a restricted range of naval communication and the protection of local shipping, and which are not of sufficient importance to warrant a large outlay, will be maintained in a state of efficiency equal to the demands made upon them, but without any attempt to increase their power.

Owing to the increased average range of radio sets, and to the proximity of commercial stations, two stations, Cape Henlopen, Del., and Yuerba Buena Island, Cal., were discontinued as unnecessary.

As a result of the work done by the radio expedition to Alaska last summer, the chain of Alaskan radio stations is in excellent condition.

The establishment of the office of superintendent of radio service has freed the bureau of details consequent to the opening of naval coastal radio stations to paid commercial business and has left it free to devote more attention to the technical development of radio apparatus and material.

The naval radio laboratory at the Bureau of Standards has rendered valuable technical assistance in the work of the bureau.

ALASKAN COAL.

During the past year an expedition was sent to the Bering River coal fields of Alaska to mine sufficient representative Bering River coal to allow a sea test on a large naval vessel, and an evaporative test at the engineering experiment station in comparison with similar tests with Pocahontas coal. The expedition was also to ascertain whether there exists in the Bering River fields a sufficient quantity of high-grade coal to warrant any reliance on this field for naval supply. This expedition, in charge of Passed Assistant Surgeon J. O. Downey, United States Navy, and under the technical direction of

the Bureau of Mines, mined and sacked about 800 tons of coal. During the winter this coal was hauled on sleds from the mines to the banks of Stillwater Creek by a party under Hospital Steward R. Aikman, United States Navy, a difficult feat worthy of much praise. The coal is now being brought by boats from Stillwater to Controller Bay, where the armored cruiser *Maryland* will take it on board for test.

Another naval expedition under the technical direction of Dr. J. A. Holmes, Director of the Bureau of Mines, is mining a quantity of coal and conducting a similar investigation of the Matanuska fields of Alaska.

The results of the tests of these coals are expected to have an important bearing on the supply of coal for the Navy in Pacific waters and upon the commercial supply of coal on the west coast. If this coal proves to be suitable for naval use, immediate steps should be taken to make it available by constructing railroads and by leasing coal lands.

FUEL OIL.

The established policy of the department being that all battleships and destroyers shall use oil fuel exclusively, it is becoming a matter of the first importance to assure an adequate supply at a reasonable price. The price of oil is advancing so rapidly as to increase materially the Navy's expenditure for fuel, and with the increasing demand for petroleum products further increase in the price of oil may be anticipated. To counteract this in small measure the Navy might use oils not so well suited for its needs, but this would be at a sacrifice of efficiency, and some of the advantages that are to be secured with good oil would have to be sacrificed. The only method of insuring cheap oil embodying the refined products most adaptable to smokeless high-speed running appears to be to begin our own producing and refining, and in order to accomplish this it is strongly recommended that the department take the steps necessary to lease oil lands and to establish and operate a refinery. If this is done the sale of gasoline and illuminating oils obtained from the crude oils, and which are not needed in fuel oils, will, it is believed, go far toward covering the expense of operation, and the Navy will thus obtain a grade of oil in every respect suitable for its use, and at a cost far below the present price.

TESTS OF SUBAQUEOUS COAL.

The coal stored at New London has been given an annual evaporative test during the two years it has been stored there, and no difference in evaporative efficiency has been shown between that stored under cover and that under water.

INSPECTION OF MATERIAL.

Marked improvement has been made in the administration of the inspection work, resulting in reduction of correspondence and elimination of delays that formerly obtained. With the active cooperation of the Bureau of Supplies and Accounts, chemical analyses are

promptly made, and thus one of the greatest causes of delay and of complaint on the part of the contractors has been practically eliminated.

Efforts are being made to reduce the purchase of material for the use of this bureau in small orders and to secure a better price by purchasing in large quantity, which will serve to obtain better material and also reduce the work of the inspection force. It has also been arranged with the Bureau of Supplies and Accounts that certain standard instruments shall be purchased and carried in store by one navy yard and distributed to other yards as required, a practice which is followed with other supplies and which it is intended to extend as much as possible. This will insure prompt delivery, a lower price, and the use of standard articles, all of which are to be desired.

Comparison of the inspection work performed during the fiscal year ending June 30, 1913, with that of the preceding fiscal year is indicated in the table below:

	Pounds inspected and passed.	
	1912	1913
Steam Engineering.....	31,384,718	31,824,320
Yards and Docks.....	27,423,467	27,787,697
Supplies and Accounts.....	4,095,397	1,974,131
Construction and Repair.....	257,530	325,775
Ordnance.....	89,852	809,949
Equipment.....	11,750	
Navigation.....		6,670
Medicine and Surgery.....		10,725
Total.....	63,262,714	62,739,267

	Number of—	
	1912	1913
Districts.....	9	8
Officers in charge.....	9	7
Civilian assistants.....	29	29
Warrant officers.....	1	1
Chemists (Pittsburgh, Pa.).....	1	1
Manufacturing establishments at which inspections have been made.....	588	626

CONDITION OF MACHINERY OF NAVAL VESSELS CONSTRUCTED OR UNDER CONSTRUCTION JULY 1, 1913.

The following vessels have been tried during the year:

Torpedo-boat destroyer No. 38, <i>Jarvis</i> (New York Shipbuilding Co.):	Knots.
Speed on standardization trial (average of 5 highest runs).....	31.767
Speed on 4-hour full-speed trial.....	30.009
Torpedo-boat destroyer No. 39, <i>Henley</i> (Fore River Shipbuilding Co.):	
Speed on standardization trial (average of 5 highest runs).....	30.316
Speed on 4-hour full-speed trial.....	30.412
Torpedo-boat destroyer No. 43, <i>Cassin</i> (Bath Iron Works):	
Speed on standardization trial (average of 5 highest runs).....	31.249
Speed on 4-hour full-speed trial.....	30.137
Seagoing tug No. 12, <i>Sonoma</i> (New York Shipbuilding Co.):	
Speed on standardization trial (average of 5 highest runs).....	13.443
Speed on 24-hour full-speed trial.....	13.08
Seagoing tug No. 13, <i>Ontario</i> (New York Shipbuilding Co.):	
Speed on standardization trial (average of 5 highest runs).....	13.665
Speed on 24-hour full-speed trial.....	13.227

Collier No. 9, <i>Proteus</i> (Newport News Shipbuilding & Dry Dock Co.):	Knots.
Speed on standardization trial (average of 5 highest runs).....	14. 904
Speed on 18-hour full-speed trial.....	14. 675
Collier No. 11, <i>Orion</i> (Maryland Steel Co.):	
Speed on standardization trial (average of 5 highest runs).....	14. 902
Speed on 48-hour full-speed trial.....	14. 469
Collier No. 12, <i>Jason</i> (Maryland Steel Co.):	
Speed on standardization trial (average of 5 highest runs).....	14. 422
Speed on 24-hour full-speed trial.....	14. 322
Battleship No. 32, <i>Wyoming</i> (William Cramp & Sons):	
Speed on standardization trial (average of 5 highest runs).....	21. 323
Speed on 4-hour full-speed trial.....	21. 223
Submarine No. 22, <i>F-3</i> (Electric Boat Co.), speed on 4-hour full-speed trial.....	14. 00
Submarine No. 23, <i>F-4</i> (Electric Boat Co.), speed on 4-hour full-speed trial.....	13. 92
Submarine <i>G-1</i> (Lake Torpedo Boat Co.), speed on 4-hour full-speed trial.....	14. 07

The following are the percentages of completion July 1 of the machinery of vessels now under construction:

Battleships: *New York*, 78.49; *Texas*, 86.50; *Nevada*, 43.45; *Oklahoma*, 36.49.

Torpedo boat destroyers: *Cassin*, 98.78; *Cummings*, 93.31; *Downes*, 66.30; *Duncan*, 96.27; *Aylwin*, 95.71; *Parker*, 93.43; *Benham*, 92.68; *Balch*, 91.01; *O'Brien*, 5.59; *Nicholson*, 5.59; *Winslow*, 5.55; *McDougal*, 23.47; *Cushing*, 10.43; *Ericsson*, 1.90.

Fuel ships: *Proteus*, 99; *Nereus*, 82.60; *Jupiter*, 99.10; *Kanawha*, 2.30.

Gunboats: *Monocacy*, 64.40; *Palos*, 64.40; *Sacramento*, 31.82.

Submarines: *G-2*, 98.10; *G-3*, 25.77; *G-4*, 88.76; *H-1*, 99.21; *H-2*, 99.13; *H-3*, 96.40; *K-1*, 94.10; *K-2*, 92.10; *K-3*, 86.37; *K-4*, 87; *K-5*, 76.83; *K-6*, 75.72; *K-7*, 55.81; *K-8*, 55.43.

EXPERIMENT STATION.

The work of this station is constantly growing, and has now reached such proportions as to make it extremely difficult to handle it with the present staff. The valuable work that has been done in studying the corrosion of boiler and condenser tubes and in testing engineering material and supplies has continued, and has been productive of good results.

The photomicrographic laboratory has contributed much to our knowledge of castings and forgings, and has demonstrated the practicability of making photomicrographic examination of a shaft before it is installed in a ship.

Officers of the Post Graduate School make free use of the station and are detailed as observers and computers on tests. During the winter months the midshipmen also visit the station during drill periods and acquire a knowledge of the methods pursued and of the results obtained.

The small repair facilities of the station are utilized by the Reserve torpedo group and by the aviation camp.

R. S. GRIFFIN.

The SECRETARY OF THE NAVY.

REPORT OF THE PAYMASTER GENERAL OF THE NAVY, CHIEF OF THE BUREAU OF SUPPLIES AND ACCOUNTS.

NAVY DEPARTMENT,
BUREAU OF SUPPLIES AND ACCOUNTS,
Washington, D. C., November 4, 1913.

SIR: The Paymaster General of the Navy has the honor to submit the annual report of the operations of the Bureau of Supplies and Accounts for the fiscal year ending June 30, 1913. It is accompanied by tabulated statements showing in detail the cost of maintaining the fleet by ships and the cost for maintenance of and repairs and additions to navy yards and stations.

The principal items show:

Amount drawn from the Treasury-----	\$132,192,749.75
Expenditures on account of construction of new ships, including labor and material-----	24,630,999.06
Cost of repairs to ships and equipage at home and abroad-----	7,890,454.09
Cost of maintaining ships in commission (other than receiving ships), including pay of officers and men, subsistence, and incidental expenses-----	34,900,504.26
Cost of maintaining receiving, prison, and station ships, including pay of officers and enlisted men, subsistence, and incidental expenses-----	6,214,023.65
Cost to the Navy:	
Of the Fish Commission-----	103,090.42
Of the Naval Militia of the several States-----	45,935.70

THE BUREAU.

The operations of the bureau have been much extended in the fiscal year 1913. This increase in its scope and work was brought about by the enlargement of the general establishment and the consequent greater demand made for its services to meet the changing conditions in other bureaus due to their improved methods of management and to the higher standard of efficiency maintained in the fleet. To meet these requirements more intense application has been demanded of its commissioned and clerical personnel. The ready response given has afforded a practical demonstration of their interest. Both have cooperated with the bureau in its endeavor to place the management of its activities upon a firm and satisfactory basis. In this work the several technical bureaus have aided also. The spirit of cordial co-operation shown by them is appreciated by this bureau, which desires to invite the particular attention of the department thereto.

The emergency increase of the Pay Corps by 20 officers, who were commissioned in the course of the year just closed, relieved, in some degree, the pressing requirements of the bureau with regard to its activities afloat and ashore; but a shortage still exists, which the ten to be commissioned within the next few months will fall far short of filling. The need of sufficient officers, as pointed out in the following paragraph, to perform necessary duties ashore and afloat and to allow junior paymasters to be detailed for independent commissary duty on the larger ships is an important one and one that can not be relieved without a further increase in the corps. A shortage also exists as to clerical employees, for the money limit under the appropriations

"Pay, miscellaneous," and "Provisions, Navy," which was slightly increased in 1912, is insufficient to provide for the full needs of the service.

* * * * *

PURCHASES AND CONTRACTS.

The system referred to in previous annual reports of making purchases under annual contracts for those supplies which do not materially fluctuate in price has been further extended, and the list of items so purchased considerably increased, with the result that materials of all kinds are being bought as economically and efficiently as possible. Every effort is made to go into the market at the most favorable times of the year, in order that the Navy Department may secure the widest competition and the lowest prices. The economy thus effected, combined with that accomplished through the consolidation of purchases for the various yards, means annually the saving of very great sums.

In purchasing supplies, the department has availed itself to a greater extent than ever before of the advantage of having material shipped by land-grant railroads and securing competitive rates for shipment of Government property from other railroads. This has been achieved by considering bids for material f. o. b. the place of manufacture, instead of requiring all bids to be figured on a delivery basis. By delivery being accepted from contractors at the place of manufacture, material travels as Government property, and is subject to shipment at land-grant or at special rates. An instance of this that should be noted was the purchase of hull material for the two fuel ships being constructed at the navy yard, Mare Island, Cal. A saving of \$25,000 was made by this method on a purchase of about \$340,000 worth of material.

In order, however, to continue this manner of purchasing material, by means of which the Government will be saved large sums of money on the purchase price, the appropriation for freight will have to be increased. It will be readily seen that the appropriations purchasing the stores will be saved far in excess of the amount required, by the Government taking advantage of the land-grant rate provided by law, and the special low rates made to the Government by transportation companies.

SPECIFICATIONS.

During the past fiscal year the bureau has continued the standardization of its specifications. In July, 1913, 974 standard specifications were in effect, as compared with 886 in force July 1, 1912, and 827 for the fiscal year 1911.

The great demand for Navy Department specifications for use in commercial pursuits, and the calls received by the bureau for them from public and scientific libraries, technical schools and colleges, engineers, testing laboratories, and railway companies afford striking evidence of the care exercised in their preparation by the various technical bureaus of the department. The use of standard specifications reduces purchases of monopolistic products and those of a proprietary nature. They make competition possible.

MEAT INSPECTION.

The Bureau of Animal Industry, Department of Agriculture, has continued rendering valuable service in the inspection of meat and meat food products. Resident inspectors of the Bureau of Animal Industry have been stationed at the navy yards at Boston, New York, Philadelphia, and Puget Sound, to inspect all deliveries of provision supplies of this nature for use of the navy yards and vessels. At other points the quality of meat deliveries and other food articles is subject to the supervision and inspection of agents of the Department of Agriculture, who have rendered valuable service.

During the past year specifications for meat and meat food products have been generally overhauled where they were incomplete or conflicted with commercial practice. They have been given careful consideration by experts of the Bureau of Animal Industry and other authorities, and it is believed that they are as nearly perfect as possible. Commercial cuts of meats have been adopted as far as feasible, thus avoiding the additional expense of requiring specially prepared meats for naval use without in any way lowering the standard of quality.

COAL AND OTHER FUEL.

Contracts which covered the supply of fuel for the Navy during the year 1913 were made at reasonable rates, and no difficulty was experienced in obtaining deliveries of either coal or fuel oil except that due to the lack of tank vessels and oil barges, concerning which adequate recommendations are in the possession of the department. The addition of two tankers, already authorized, with a capacity of about 2,000,000 gallons each, will not only facilitate deliveries but considerably reduce the price of oil, which is at present increasing.

Fuel oil.—The fuel oil facilities at Melville, Norfolk, Charleston, and Key West have been doubled during the past year. Storage facilities sufficient in capacity to meet the immediate demands of the fleet have also been provided at Boston and Guantanamo. With a reasonable increase in tankage at Melville and Norfolk and the installation of necessary facilities at San Diego, Puget Sound, San Francisco Bay, and New York, it is believed that a tankage capacity will be provided which will meet the present needs of the Navy in times of war as well as peace. This opinion is based upon the belief that the fleet operating in the Atlantic, with base in the West Indies, would secure most of its fuel oil supply from Gulf of Mexico ports on the Texas and possibly the Mexican coasts, and that the fleet operating in the Pacific would have at its disposal the almost unlimited fuel oil resources of the California coast.

Coal.—Particular attention is invited to the lack of facilities for storing and handling coal on the Pacific coast, particularly at San Francisco, which is about 5,000 miles from the base of supply. Available facilities are utterly inadequate to meet the demand which will be made upon them upon the opening of the Panama Canal. Immediate steps should be taken toward the construction at this point of a coal depot providing for an underwater storage plant, the capacity of which should be from 200,000 to 300,000 tons.

Such a plant should be so located that its capacity might be readily doubled and so as to be able to receive both water and rail shipments.

The increased mobility of the fleet makes increased storage facilities at this point absolutely imperative. All coaling stations are at present well stocked with coal to the limit of their capacities. This has made necessary a great deal of transportation; but whenever possible advantage has been taken of the market freight rates in order to bring moving costs to the lowest obtainable figures. Coal has been shipped to our Pacific coast and to our Pacific depots at a minimum expense.

No definite report can as yet be made with reference to the Alaskan coal fields. They are at present being carefully investigated by experts, however, and it is hoped that the result of their researches and tests will show that a high grade coal can be secured from Alaska at a reasonable cost.

During the fiscal year 1913 there were consumed by the fleet 658,813 tons of coal, at a cost of \$2,990,331.98; of which 25,676 tons, valued at \$110,244.07 were consumed by yard craft. The following table shows the total consumption aboard naval vessels during each of the fiscal years 1906 to 1913, inclusive:

Year.	Tons.	Year.	Tons.
1906	436,654	1910	651,241
1907	521,990	1911	744,443
1908	618,085	1912	729,903
1909	813,615	1913	658,813

The total quantity of domestic coal purchased was 900,092.48 tons, 268,183 tons of which were transported to navy yards, naval stations, and naval coal depots by means of chartered vessels, foreign and American, at a total cost for transportation of \$1,883,656.76, or an average cost for transportation of \$7.02+ per ton. The balance of the domestic coal purchased, being 631,909.48 tons, was delivered to navy yards, naval stations, and coal depots, as well as to vessels of the different fleets, by naval colliers, for which there were no transportation charges.

A total of \$2,666,141.86 was paid for all the domestic coal purchased, which amounted to 900,092.48 tons, at an average cost of \$2.96+ per ton. The total cost of all coal purchased, including the cost of that transported, was \$4,549,798.56, and the average cost of it, together with the cost of that transported, was \$5.05+ per ton.

The consumption of fuel oil on board naval vessels during the fiscal year 1913 amounted to 15,194,879 gallons, valued at \$490,627.87, while the aggregate consumption during the fiscal year 1912 was 14,146,714 gallons, valued at \$340,387.07. Average cost per gallon, 1912, \$0.024; 1913, \$0.032.

GENERAL STOREKEEPING SYSTEM ASHORE.

The work of the general storekeeping system ashore has been carried forward with uniform efficiency. Progress has been made in endeavors to improve administrative methods, and the result of the 12 months' operations is one that is pleasing to the bureau.

A noteworthy feature of the yards' activities has been the development of a closer cooperation among the general storekeepers of the

several yards with reference to a more discriminate buying and disposition of stock. By means of careful estimates, feasible substitutions in the issue of material, and transfers from one yard to another, the troublesome problem of avoiding excess stock accumulations is well on the way to successful solution. In the matter of reduction by substitution issues this bureau wishes to acknowledge with gratitude the hearty manner in which the other bureaus have acted in unison with its policy. They have rendered telling aid upon many occasions. Little could have been accomplished along this particular line without the cooperation that has been so readily given.

GENERAL STOREKEEPING SYSTEM AFLOAT.

The operation of the general storekeeping system afloat in the past 12 months has been uniformly successful. Each year since the comparatively recent inauguration of the system has confirmed the wisdom of the consolidation of stores and accounts under one officer, who is made responsible for stock maintenance and the accurate rendition of proper returns. The system is growing to be more firmly based, and consequently more readily workable, as its actual trying out by experience develops certain defects in organization and method, at first not discernible, and indicates the appropriate remedies to be adopted.

A survey of the work accomplished in the fiscal year just closed brings out two great needs with strikingly increased clearness. One has to do with adequate storage facilities; the other, with a trained enlisted personnel. Both of these important questions have been dwelt upon in a former report, but their solution, not yet achieved, is so vitally essential to a highly successful handling of material afloat that it is considered proper and necessary again to bring the matter to the department's attention. The following pertinent paragraphs are quoted from the annual report of the Paymaster General for the fiscal year 1912:

A pressing necessity is felt for the creation of a permanent branch of general storekeepers' yeomen, * * * which will prevent the frequent change on board ships of yeomen to and from duty in the general storekeeping department. This is now a source of * * * annoyance and inefficiency, varying as the particular conditions on each vessel differ. The proper administration of the general storekeeping system afloat requires yeomen skilled not only in purely clerical work, but also possessed of a fairly wide technical knowledge regarding the supplies and material handled, and this can be gained only through the experience derived from long-continued and uninterrupted service in this branch. It is also desired to emphasize here the importance of having on every ship a single large storeroom, or an assignment of smaller storerooms immediately adjacent to each other, for the proper stowage and care of all Title X supplies. With the exception of ships of the dreadnought class, nearly all vessels suffer from lack of proper storerooms suitably grouped, it being necessary to carry such material in ill-located and widely separated compartments. It is believed that this can be remedied in practically every case by minor alterations in partitions and bulkheads in no way affecting the structural stability of the ship.

Economic storage and issue, with the highest all-around efficiency in the operation of the system afloat, can be attained only with adequate facilities and a trained personnel.

In the year covered by this report much has been accomplished toward the betterment of storeroom conditions on some vessels. The immediate result in higher efficiency on these particular ships made

all the more clear the necessity of similar improvements on all vessels. Older ships should have proper stowage facilities installed, so far as their structural limitations will permit and their estimated period of future usefulness will justify the cost, and especial care should always be taken, as is now being done, to provide such facilities originally in the construction of new ships.

As to the question of personnel, it is a matter of regret that nothing has been done to remedy the situation set forth in the above quotation. Not only is the want of trained yeomen being increasingly felt with the continued development of the general storekeeping system afloat, but the lack of efficient storemen is also proving a serious handicap. Complaint from ships' general storekeepers in these respects is widespread. Accurate bookkeeping, the careful receipt, stowage, and issue of supplies, and proper inventories at needed intervals are seriously interfered with by frequent shifts in a personnel largely untrained. And not only is the general storekeeping department aboard ship affected adversely by these handicaps as to ease and accuracy in internal administration but other ship departments are even more seriously involved, since they are dependent upon the general storekeeping department for the proper maintenance and ready issue of stock absolutely necessary to the upkeep and running of the vessel. At present storemen are detailed temporarily from deck and engineer divisions, and the greatest difficulty is experienced in securing any of the capable men of these divisions, as the detail is naturally unpopular with those who are ambitious to rise, due to the fact that they lose all chance for promotion in deck and engineer divisions while so detailed and can be given practically none in the general storekeeping department. This very undesirable condition of affairs should be corrected at once; and to accomplish this relief the bureau is firmly of opinion that only one measure is at all feasible, viz, the establishment of a permanent branch of general storekeeping yeomen and storemen, so constituted as to afford all reasonable opportunity of promotion.

It can not be emphasized too strongly that a successful operation of the general storekeeping system afloat depends vitally upon a proper enlisted personnel; and further, that it is beyond question impossible to obtain such a personnel under the present method of nonpermanent details, and, so far as storemen are concerned, the almost utter lack of opportunity of promotion.

THE NAVY RATION.

Continued effort has been made during the past year by the bureau and by officers afloat to reduce the average cost of the Navy ration without lessening its nutritive value or narrowing its variety.

The steady increase in the cost of the ration for some years past has been the result of universally prevalent conditions, from which not even the Government could escape, although making its purchases upon a very large wholesale basis. The price of food supplies which constitute the Navy ration has everywhere advanced. Especially has this been true of the meat components. Orders which fix the quantity percentage of the various meat issues, limit the proportions that may be used of the more expensive articles, and rigidly govern the inspection of all deliveries are now in force and assist in keeping

the average cost of the ration at approximately the lowest figure consonant with the proper subsistence of the men.

The bureau has a slight change of the ration law in contemplation which will allow an independent daily issue of fruits. This proposed modification will be the subject of a separate communication.

RATIONS FOR COMMISSIONED OFFICERS AFLOAT.

The bureau recommends that effort be made to procure legislation giving rations and allowing the commutation thereof, in number as listed below, to all commissioned officers of the several corps of the Navy and of the Marine Corps, as well as to warrant officers, pay clerks, and mates, while serving on sea duty. The present high cost of living bears very heavily upon officers afloat, who besides their customary necessary expenses aboard ship have also to meet those of their homes ashore. This double expense, through having to maintain two establishments, has to be met, it should be noted, from reduced compensation, as during the periods they are attached to vessels officers lose all right to quarters ashore, together with heat and light allowances, and commutation therefor. A further burden incident to sea duty is the frequent entertaining which naval officers have to do as representatives of the Government, the unavoidable expenses of which, in nine cases out of ten, have to be paid out of their personal funds, as, unlike foreign States, our Government only very rarely, and then upon unusual occasions, allows any reimbursement for expenditures thus necessarily incurred in an official capacity.

It is recommended that the following daily allowances of rations, or commutation therefor, be requested for all officers of the Navy and Marine Corps while on sea duty:

Commander in chief-----	7
Division commanders-----	6
All officers of the rank of captain in the Navy-----	5
All officers of the rank of commander-----	4
All officers of the rank of lieutenant commander, lieutenant, and ensign----	3
All warrant officers, pay clerks, and mates-----	2

Such allowances of rations is felt to be only a matter of equity.

COMMISSARY STORES.

In line with the bureau's policy of establishing commissary stores at all yards and stations as rapidly as officers become available, stores were established in the course of the year at the navy yards at Boston, New York, and Philadelphia. Including the one at the Washington yard, which was established October 17, 1910, four are now being maintained, but until a sufficient number of pay officers are available stores can not be established at all yards and stations.

BUREAU OF EQUIPMENT.

The duties of the Bureau of Equipment have been distributed yearly among the other bureaus and offices of the department, in accordance with the naval appropriation acts passed on and since June 24, 1910, and the appropriations pertaining to this bureau have been allotted among the other bureaus for the performance of these duties.

This tentative and annual distribution of duties and appropriations has been as fully satisfactory as could be expected from the temporary nature of the assignments, and has proven beyond question that a separate Bureau of Equipment is not, in these days, an essential unit of the Navy Department organization. Its work naturally divides itself into the technical work of other bureaus, and logically should be assigned permanently to them.

It is worthy of especial mention that the respective portions of the equipment appropriation assigned to the other bureaus have been administered in such a manner by them that no deficiency in the appropriation has been reported in the time covered by the distributions. This is a noteworthy result when considered in the light of the large number of deficiencies of prior years.

It is recommended, therefore, that the Bureau of Equipment be permanently abolished, and that the appropriations and clerical assistance formerly provided for this bureau, and temporarily distributed among the several other bureaus for the last three fiscal years by Executive order, be included in the appropriations for the fiscal year 1915 under the respective regular appropriations for the other bureaus, as recommended in the estimates submitted to the Congress. The experience of three years clearly indicates a proper basis of apportionment, and a judicious distribution should be easily effected.

* * * * *

SCRAP METALS AND OTHER CONDEMNED MATERIAL.

The employment of a scrap-metal expert was continued during the past year. His services have resulted in changes of method in shop administration at several yards and stations which have accomplished tremendous savings to the Government. A great deal of material formerly sold at low figures, due to its not being properly segregated, is now profitably made use of in various ways, and in the case of that which is at present sold far better prices are obtained by reason of recommendations relative to its sale made by the expert. His knowledge enabled him to supervise the handling of all kinds of scrap accumulations and to make timely suggestions to proper authority regarding the most economic disposition thereof. The duties of this expert have been confined to acting in an advisory capacity to the commandants of the yards he has visited in obedience to the orders of the department.

In the course of the year the expert on scrap metals visited the navy yards at Portsmouth, Boston, New York, Philadelphia, Washington, and Norfolk and the naval torpedo station at Newport. He will shortly be sent to the navy yards at Mare Island and Puget Sound to inaugurate there the salvage work which has achieved such good results at the eastern yards.

The great savings made possible by scientifically treating scrap material are reasons which speak for themselves as to the necessity of continually employing the services of experts along this line.

DAIRY AT THE NAVAL ACADEMY.

The results from the operation of the dairy at the Naval Academy during the last year have been exceedingly gratifying. Two hundred and fifty gallons of milk with all the requirements of "certified" milk are supplied daily to the brigade of midshipmen.

Since the establishment of the dairy, October 1, 1911, sickness due to gastroculosis, typhoid fever, and septic tonsillitis, caused by infected milk, have been eliminated. The action of Congress last year in providing \$100,000 for the purchase of land for the permanent establishment of the dairy is substantial evidence of its appreciation of the work being done to preserve the health of these young men whose lives are being placed at the disposal of the Government for the defense of its integrity and honor.

With this appropriation a new and suitable site has been acquired at Gambrill's Station, consisting of 771 acres and costing \$56,725.

The hearty cooperation of the Department of Agriculture (Bureau of Animal Industry) is again gratefully acknowledged. Under its supervision the plant is scored and the bacterial count made periodically. The advice of its employees has been of great assistance in the attainment of the satisfactory results referred to above.

With the added resources of the farm and the more up-to-date equipment of the plant, the dairy will be placed on a permanent basis for satisfactorily supplying the needs of the Naval Academy.

T. J. COWIE,

Paymaster General, United States Navy.

The SECRETARY OF THE NAVY.

REPORT OF THE SURGEON GENERAL, UNITED STATES NAVY.

DEPARTMENT OF THE NAVY,
BUREAU OF MEDICINE AND SURGERY,
Washington, D. C., November 6, 1913.

To: Secretary of the Navy.

Subject: Annual report for fiscal year 1913.

The following report of the activities of the Bureau is submitted.

During the period from January 1, 1912, to January 1, 1913, the health of the Navy has been good, showing a considerable improvement over the preceding year and marked improvement over the average year, as shown by the ratio per 1,000 in the following table:

	Admissions and readmissions, all causes.		Sick days.		Deaths.	
	Total.	Rate per 1,000.	Total.	Rate per 1,000.	Total.	Rate per 1,000.
Average, years 1901-1910.....	38,992	897.35	472,372	10,871.12	234	5.38
1911.....	50,960	829.98	605,073	9,874.60	253	4.12
1912.....	48,742	787.46	584,889	9,449.39	253	4.08

DISEASES OF SPECIAL INTEREST.

ANIMAL PARASITIC INFECTIONS.—The increase in the number of admissions in this class is due to the increased interest in hookworm disease and the greater number of examinations for the parasite. ANKYLOSTOMIASIS.—In Guam hookworm infection is practically universal among the natives. Treatment by thymol is being used at present and has proved quite successful. FILARIASIS.—The number admitted with this disease was less than in 1911. As before, all cases occurred in native Samoans. Tincture of ferric chlorid is the most effective drug yet found for treating the acute manifestations, but it does not appear to cure the disease. Salvarsan has been administered in a series of cases without result.

CHOLERA ASIATICA.—One case of Asiatic cholera developed aboard a ship on the Asiatic station and was treated by intravenous injections of hypertonic saline solution, resulting in recovery. DENGUIS.—A considerable reduction from the previous year in the number of cases is noted. This is attributable in part to the efforts made to prevent the breeding of mosquitoes in places where the disease is prevalent; this work is to be continued and a further reduction is anticipated. The disease is endemic among the natives in the Tropics and causes greater damage to the naval personnel than any other of the tropical diseases. DIPHTHERIA.—Admissions for this cause increased from 36 in 1911 to 58 in 1912. More than half of the cases were reported from the naval hospital, Philadelphia, and the greater part of these were bacteriological only, the symptoms being mild or absent. No deaths from diphtheria occurred during the year.

DYSENTERIA AMÆBICA.—Admissions decreased from 1911. One case was reported from the *Princeton*, and was of special interest as the first known to have appeared in American Samoa. The infected man had been in Samoa for 10 years.

FEBRIS FLAVA.—Eight cases of yellow fever, with two deaths, occurred on the *Yorktown* at Guayaquil, Ecuador, in January, 1912. The outbreak was quickly controlled by measures aimed to prevent mosquito inoculation, thus enabling the vessel to continue on the station and duty assigned.

FEBRIS PNEUMONICA.—Efforts have been made to correct conditions favoring the high incidence rate of pneumonia. At the training station, Newport, the rate per thousand for 1912 is about one-fourth of the average rate for the preceding 12 years and lower than in 1911, when the rate was one-third of the 12-year average. In the opinion of the medical officer at the station, prevention of overheating of living and working spaces has been the one great factor in reducing the number of cases of pneumonia. At the naval training station, San Francisco, routine spraying of throats and sterilization of mess gear has helped in reducing the incidence of this and other infectious diseases. A considerable reduction in the number of cases from all training stations and from shore stations in general is noted; but the force afloat showed an increase over the preceding year.

FEBRIS TYPHOIDES.—The damage by this disease during the past five years is shown in the following table:

Year.	Admitted.		Died.	Sick days.
	Number.	Rate per 1,000.		
1908.....	176	3.32	10	9,589
1909.....	189	3.30	17	10,378
1910.....	193	3.30	10	9,426
1911.....	222	3.61	15	14,024
1912.....	57	.92	2	5,234

The small number of cases occurring in 1912 shows some of the result of the compulsory administration of typhoid prophylactic to the entire personnel; this work has now been completed, but its full effect does not show in the statistics of 1912, as the work was still being carried on during that year. From the inception of this practice up to June, 1913, about 80,000 persons were inoculated and only seven authentic cases of typhoid occurred in those who had received the full course of the antityphoid inoculation; four of these were at one small tropical station and it has been determined that this was due to deterioration of the vaccine as a result of the conditions to which it was subjected during transportation. Cases of typhoid in persons who had been immunized were, in general, characterized by mild symptoms and rapid convalescence.

Attention is called particularly to the fact that no typhoid appeared among the men of any of the expeditionary forces in the field, a fact of the greatest military importance.

The annual report of the fleet surgeon of the Atlantic Fleet states that the administration of the prophylactic has practically eradicated typhoid from the fleet and that this serious menace to the health of the Navy seems to have passed away. Ships have spent long periods of time in ports where typhoid was prevalent without a single case appearing on board. At the Naval Academy in past years many cases have developed in midshipmen returning from home after the holidays, but there were none this year, all individuals having received the preventive inoculation.

It is to be anticipated that the sense of security produced by the favorable results of immunization may lead to neglect of the sanitary precautions which served to lessen the incidence of typhoid before immunization was adopted. Relaxation in the strict observance of these precautions must be prevented, not only because they are valuable safeguards against diseases other than typhoid, but also, because, as yet, we are not able accurately to gauge the strength or duration of the immunity produced in the individual.

From the navy yard, Philadelphia, and the Naval Academy it is reported that in the districts where the vegetables used at these places are grown, the use of night soil as fertilizer is common. When it is considered that the night soil contains the excreta of many typhoid patients and carriers, and that certain vegetables on which it is used, such as lettuce, celery, and radishes are eaten uncooked, the grave danger in the use of this class of fertilizer is evident. Earnest

efforts have been made by the commanding and the medical officers to have this condition corrected but, even with the cooperation of the health authorities of the State, little has been accomplished.

MALARIA.—A slight reduction in the number of cases is noted, the greatest reduction being in the estivo-autumnal type. A severe outbreak appeared on the *Tacoma* at Tampico, Mexico, both the tertian and estivo-autumnal types being present in a malignant form. Sanitary improvements on the rifle range at Winthrop, Md., have progressed so far that no cases of malaria were reported during 1912 from this previously fertile source of infection. Antimosquito work is being carried on actively at stations where malaria is prevalent. It is believed that in the Tropics many are infected during long marches while sleeping without nets in mosquito-infested localities. The best method of prevention is not yet determined; it is evident that prophylaxis by means of 5-grain doses of quinine is not always successful. In Guam minnows have been placed in several bodies of water to prevent mosquito breeding. Salvarsan has been used in the treatment of a small number of cases with encouraging results.

MORBILLI.—Admissions were reduced from 461 in 1911 to 169 in 1912. **PAROTIDITIS EPIDEMICA.**—Admissions reduced from 887 to 591. **RUBELLA.**—Reduced from 170 to 155. **SCARLATINA.**—Increased from 14 to 33, the increase being in the force afloat. At shore stations the number of cases was reduced from 13 to 1. **VARICELLA.**—Reduced from 54 to 28. The considerable decrease in the number of admissions for these contagious diseases, which always have been endemic at training stations and receiving ships, is attributed to early diagnosis and strict isolation. The policy of isolating men for a period of 10 to 14 days before transferring them from receiving ships or training stations would lessen the number of cases on the ships to which such men were transferred, and the adoption of such a practice is strongly recommended. **VARIOLA.**—Seven cases occurred during the year, five in the Philippine Islands and two at Norfolk. The occurrence of smallpox in the service from time to time is due to faulty administration of systematic vaccination and revaccination, by which an individual sometimes escapes unprotected. The necessity of vaccination should be borne in mind continually by commanding officers and members of the Medical Corps. Proper entry of vaccination in the health record is of great importance, and health records should be examined frequently to insure strict observance of this requirement.

TUBERCULOSIS in all its forms decreased from 1911, as demonstrated by the following table, which shows an improvement in every form of the disease:

	1911			1912		
	Admissions.	Sick days.	Deaths.	Admissions.	Sick days.	Deaths.
Tuberculosis miliaris acuta.....	6	79	3	1	22	.....
Tuberculosis pneumonica.....	282	10,854	11	238	10,471	8
Tuberculosis of other parts.....	19	1,142	1	16	955	1

At the naval hospital, Las Animas, Colo., treatment by graduated rest and labor has been employed for over a year, and in a large proportion of the cases the results have been gratifying. With certain contemplated changes and additions, it is hoped that arrest of the disease in as large a proportion of cases as is reported from other sanatoria will be accomplished.

A medical officer at present is studying a method developed by a physician of Asheville, N. C., which is said to be of value in the prevention of tuberculosis and possibly the cure of certain cases if treated in their very incipency.

GANGOSA.—Sixteen natives of Guam were admitted with this disease during the year. It is still believed to be a sequel of yaws and not syphilitic in origin. Arrangements have been made to apply the Noguchi luetin reaction to all persons having gangosa in order to determine if syphilis can be positively excluded as the cause. A general inspection of the entire native population was made in order that all cases of the disease might be brought under treatment. LEPROSY.—The one patient from the Navy admitted with this disease was a native Hawaiian. Eighteen lepers were removed from the colony at Guam to the island of Culion, P. I.; six others were discovered during the recent house-to-house inspection.

DISEASES OF THE NERVOUS SYSTEM.—Admissions under this class decreased from 1,015 to 809. MENTAL DISEASES occurred in about the same number as in 1911. EPILEPSIA showed an increase from 87 to 101.

The subject of mental diseases has received the close attention which is warranted by its important relation to service efficiency. Undoubtedly in the large majority of cases the disease or the tendency thereto exists prior to enlistment, and therefore the most important work in lessening its incidence must be done at the recruiting office by excluding the applicant whose defective mental equipment unfits him for the service.

Throughout the world an increasing interest in the subject of mental defectives is manifested, as a result of the realization of the fact that they are increasing much more rapidly than is the population as a whole. The feeble-minded constitute the most dangerous element of any community, their defects are not remedied by association with normal individuals, and they are the enemies of law and efficiency. In the service they are frequently at conflict with military discipline and make up a large part of the malefactors; they are victims of mistreatment at the hands of others, and their unstable mental equilibrium is disturbed by small quantities of alcohol. The change of environment consequent upon entrance into military life alone may be sufficient to cause grave mental derangement in such persons.

Detection of the mentally unfit is often a vexing problem even under the most favorable conditions, and the difficulties are increased greatly by the circumstances under which the determination must be made in the recruiting office. Diagnosis of idiocy and low-grade imbecility is not a difficult matter, but the more dangerous high-grade imbecile, moron or moral imbecile, may be physically well developed, may appear mentally alert and bright, yet have latent immoral and criminal tendencies. The exclusion of these types requires most careful study of the applicant, and the great importance, from a military point of view, of the medical examiner's duties has been frequently

emphasized. For the detection of those classed as feeble-minded the Binet-Simon tests have been employed at one recruiting office, and the indications are that this method will prove to be of value within certain limits.

In this connection the study of late cases of syphilis, in which there are no apparent symptoms, is of the utmost value, not only in the Navy but in civil life. It has been found that those so afflicted may, under strain of great responsibility, develop practically any type of mental aberration known to science.

DISEASES OF THE DIGESTIVE SYSTEM show an increase from 1911, which, on analysis, is found to be due to increased incidence of appendicitis and tonsillitis. The acute digestive disturbances, which usually are associated with unsatisfactory quality of the food, show a notable reduction. This reduction is most conspicuous at the Naval Academy, where there were 707 cases with 1,432 sick days in 1911 and 298 cases with 689 sick days in 1912. It is believed that this result is mainly, if not wholly, due to the quality of milk which now is supplied by the Naval Academy dairy. APPENDICITIS shows an increase from 1911. The rate per 1,000 for the force afloat was 9.35 and for that on shore 7.25. On board ship it may be considered as an occupational disease. Factors tending to increase the number of cases above the average for civil life are the large amount of meat in the diet, lessened amount of green vegetables while at sea, and the sedentary life in many ratings, with the resulting prevalent constipation. A report from the medical officer at Samoa shows an increase in cases of appendicitis following the change from fresh to cold-storage meat, and this may be a factor in causing the large number on board ship. In the Atlantic Fleet there were during the year 173 cases of appendicitis, with no deaths, a record rarely equaled in the best equipped city hospitals, even under the most favorable conditions. HÆMORRHOIDS.—As in the case of appendicitis, the admission rate for this condition from ships is higher than that from shore stations, and the same conditions that favor the occurrence of appendicitis tend to produce hæmorrhoids. TONSILLITIS.—Admissions for this disease increased from 2,767 in 1911 to 3,419 in 1912, nearly all of the increase being among those on board ships. Ships at navy yards during bad weather usually have many cases, and this condition persists for some time after going to sea, when the disease gradually disappears.

DISEASES OF THE ORGANS OF LOCOMOTION.—Under this class PES PLANUS is the most important item, and with this condition 181 were admitted and 120 invalided from the service, causing 5,023 sick days, a slight decrease from the preceding year. The remedial measures usually adopted for flat or weak foot are of avail only in the early stages, and they require protracted and painstaking care and long-continued individual attention. The patient must cooperate with the medical officer; he must carry out conscientiously all the details of the treatment and must sincerely desire to be cured. These essentials are difficult to realize under service conditions, and it has been necessary to dispose of most cases by invaliding from the service. In this way many otherwise desirable men are lost to the Navy and the Marine Corps each year. The situation is being studied carefully with a view to developing a means of preventing at least a part of this loss.

VENEREAL DISEASES.—The decrease in this class is indicated by the following table:

Disease.	1911		1912	
	Admissions.	Rate per 1,000.	Admissions.	Rate per 1,000.
Gonorrhea.....	5,658	92.15	5,403	87.29
Syphilis.....	1,665	27.11	1,424	23.00
Chancroid.....	1,929	31.41	2,169	35.04
Combined.....	9,252	150.68	8,996	145.33

Chancroid alone shows an increase. The sick days were reduced from 163,459 in 1911 to 147,787 in 1912. This reduction must be ascribed, in part at least, to the prophylactic measures carried out more or less strictly throughout the service. These figures make evident the fact that while the present system of venereal prophylaxis is beneficial it is not producing the results that it was hoped would follow its adoption, and the reason for this is clearly understood. We know that venereal prophylaxis, when properly administered within 6 hours of the time of exposure, will prevent infection, while after 12 hours the number of infections increases rapidly. Herein is believed to be the main cause of failure. Extended liberty of from 18 to 48 hours is allowed as often as possible on cruising ships, and so long a time may elapse between contact and treatment as to render the latter ineffective. To realize the full value of any venereal prophylactic it must be applied early, and it is believed that this can be accomplished by providing each man with a prophylactic packet when he goes ashore, with instructions as to its proper use, and impressing on him the necessity of applying the medicament immediately after contact.

From a military standpoint it has become imperative that prophylaxis for venereal disease shall be properly employed. It should be arranged so that if the men—after being thoroughly instructed in personal hygiene and the advisability of avoiding venereal exposure—persisted in willfully seeking illegitimate intercourse they could procure an effective prophylactic to carry with them and apply within six hours after exposure should this take place.

The Bureau would here repeat in strongest terms its recommendation that those who are disabled by reason of venereal disease should have their pay checked while on the sick list. This practice has been in vogue in the Army for some time with satisfactory results.

INJURIES.—Under this class the most important subject is ASPHYXIA EX SUBMERSIONE, or drowning, which shows an increase of 50 per cent over 1911. As is usual, more deaths were due to this than to any other cause. Twelve cases occurred at once at the Great Lakes Training Station; otherwise they were not grouped.

An apparatus for maintaining artificial respiration, to aid in the resuscitation of the apparently drowned or those asphyxiated by other means, has been issued to most hospitals and to the hospital ship *Solace*. These devices have already been used successfully, and it is recommended that one be issued to a ship in each division of the fleet. Despite all precautions, some deaths from drowning must be expected

among seagoing men, and the number would be much greater were it not for the system of compulsory instruction in swimming which has been adopted throughout the service.

POISONS.—Of the admissions under this class, those for ALCOHOLISMUS show a reduction from 267 in 1911 to 241 in 1912; the average for 10-year periods is shown in the following table:

Year.	Comple- ment.	Admis- sions.	Rate per 1,000.
1882-1892.....	11,775	291	24.71
1892-1902.....	31,240	248	7.93
1902-1912.....	61,897	241	3.89

In the Atlantic Fleet there were 73 admissions with 180 sick days, a record seldom equaled in any other occupational group of similar size. Alcoholism is decreasing from year to year, and no longer can be considered a serious menace to service efficiency. **VENENUM NEUROTICUM.**—Admissions decreased from 124 in 1911 to 50 in 1912. Under this heading **LEAD POISONING** is the most important condition, and the subject has been studied carefully. The effort to correct the conditions which favor it, mentioned in last year's report, has been continued with the gratifying results indicated by the figures given above. Inhalation of lead dust by men chipping paint in poorly ventilated spaces is the most common source of poisoning in the Navy, and it is believed that with stricter requirements for the ventilation of apartments in which chipping and painting are being done, together with wearing of masks by men engaged in such work, and thorough washing before meals, the incidence of lead poisoning can be reduced to a still lower figure.

SANITARY CONDITIONS AND MEASURES AFLOAT.

BATTLE CONDITIONS.—Dressing stations on battleships of recent type are located behind armor and have running water, together with suitable storage space for dressings, instruments, and drugs. On the older ships it is difficult to find suitable spaces which combine protection, accessibility, and the necessary conveniences. A battle organization which does not provide a permanent detail of at least 2 per cent of the crew for first-aid workers is faulty, since relief during battle is necessarily limited to temporary work which requires a number of intelligent men who should be thoroughly instructed in control of hemorrhage, application of first-aid dressings, and resuscitation of apparently drowned. All officers and men should be provided with identification tags and required to wear them during battle drill. This is an obligation implied by The Hague convention, to which this Government was a party. Removal of woodwork in stripping for battle has been found to create no great discomfort, and on a ship at sea for one month in this condition there was comparatively little inconvenience. During the recent battle practice a special study was made of the character of the air in turrets while firing; samples of the air before and during the firing were taken to be analyzed in order to determine the presence and character of deleterious gases.

Conditions affecting the engine-room and fireroom force and the care of those injured during battle should receive closer study. Transportation of the wounded during battle is impracticable here, as in other parts of the ship, and treatment must be limited to first aid.

Ventilation of the forward compartments of battleships is a perennial problem. Efforts to remedy the faults are continuous, and conditions have been improved slightly during the year. The combined heating and ventilating system is subject to the criticisms stated in last year's report, namely, low relative humidity of air, failure to maintain an equable temperature in all compartments, and dust and insects not removed from the air before distribution. Louvers in most compartments are near the ceiling, resulting in poor circulation of air, since, in cold weather, the warm air is not delivered into the cooler stratum at the lower level and the normal difference of temperature between the deck and ceiling is increased. This condition has been improved in individual cases by the use of a cloth chute leading from the louver to the floor, but this increases resistance to the flow of air and reduces the amount delivered. Chief petty officers' quarters are poorly ventilated in a number of ships, and when a larger air supply is structurally impossible it is recommended that fans be installed to secure thorough circulation, it having been demonstrated that the injurious effects of impure air are somewhat obviated by active circulation.

SHIPS IN DRY DOCK.—The difficulty of maintaining proper sanitary conditions on board ships in dry dock makes it necessary again to recommend either the establishment of a system of barracks at the various navy yards to house the crews of ships in dry dock or the adoption of such a system as has been developed at the navy yard, New York, by which the discharges from the ship are received into hoppers which empty into the longitudinal pipes of the dock and are thence pumped outside. This system greatly improves the conditions, making possible the use of baths and toilets by all on board, and the reports of its satisfactory working have led the commandants of other yards to take steps toward adopting it.

Pools of stagnant water left in dry docks form excellent breeding places for mosquitoes and should be controlled in this respect.

ENGINE-ROOM CONDITIONS.—Conditions under which men of the engineer's force work in the fire and engine rooms have received much attention. On the newer ships these conditions are greatly improved, and especially on those using oil for fuel. The number of heat affections continues to decrease from year to year and is now very small. The physical standard for those enlisting as, or changing rate to, coal passer is too low and efficiency is impaired by permitting boys too young and small to attempt this exhausting labor. A rigid examination by a medical officer should be required before a change of rate to that of coal passer is made. Men of the engineers' force are prone to spend their entire time below rather than to wash and change into the uniform required on deck; every effort should be made to induce these men to spend their spare hours in the open air, and any requirements which make this unnecessarily difficult and tend to keep them off the deck should be modified or abolished.

GARBAGE DISPOSAL on the larger ships demands serious consideration. Under present conditions, when at sea, the refuse is dumped

overboard or burned in the fireroom, the latter method requiring considerable handling. When in port it is usually collected by lighter once daily and dumped at sea, proper storage of the garbage for 24 hours being a serious problem. It is strongly recommended that garbage incinerators be installed on all ships as rapidly as possible, since experience indicates that a suitable type has been produced.

LAUNDRIES.—On ships having equipment for washing the clothes of the crew experience has demonstrated the feasibility and the great value of this practice. Reports from the medical officers of such ships state that it results in economy of fresh water as well as improvement in the sanitary condition of ship and crew, and costs the men no more than the soap used in the former system. Fewer buckets and receptacles for soaking dirty clothes are required; fewer damp clothes are hung in living compartments, and there is less scrubbing of clothes in unauthorized places. A distinct decrease in the number of cases of boils, scabies, and other skin diseases is reported following the establishment of crews' laundries.

COLD STORAGE.—Cold-storage rooms should not be fitted with wooden shelves or any woodwork that can be eliminated, since wood absorbs the juices of meat and can not be cleaned properly. No ship should be detailed for tropical service that has not a dependable cold-storage plant of sufficient size.

The waste of meat is large, due partly to imperfect refrigeration and partly to the methods of transportation, in the course of which it is roughly handled and exposed to the air for too long a time.

BARBER SHOPS.—Continued improvement of the sanitary conditions of ships' barber shops is observed. Antisepsis and cleanliness of the barber shops on board ship should be at least as strict as is required by law in most cities; a general appreciation of the possibilities of the barber as a disseminator of disease should result in the requirement of a uniformly high sanitary standard for all barber shops in the Navy.

OPERATING ROOMS.—Elimination of steam coils from the operating rooms of ships is desirable, and new types of sterilizers without these have been submitted to the Bureau. If an efficient and economical electric sterilizer can be produced, its adoption will be desirable.

ELECTRIC OVENS.—Experimental installation of electric bake ovens on board ships has greatly improved the cleanliness and done away with the dust of coal and ashes in such bakeries. Should they prove efficient and economical, their general adoption would be advisable.

DRUGS IN SHIPS' STORES.—Experience has shown that the sale of drugs in ships' stores, even the milder preparations, is apt to be abused. Some of these drugs which are simply mild local antiseptics are advertised as cures for numerous diseases, and a man with sore throat, for instance, fearing that his liberty may be restricted if he reports at the sick bay, may use one of these cure-alls instead and so delay reporting a condition which may prove to be diphtheria. Thus the isolation may be delayed several days and the number of contacts greatly increased. Similar preparations can be secured at the dispensary if required, and their sale in ships' stores should be prohibited.

EAR PROTECTORS.—The ideal device for protecting the mechanism of the ear from damage by gunfire has not yet been developed, but certain changes in design and new types have been tried and give satis-

factory results. The necessity of such a device is becoming more generally appreciated, and men are more willing than formerly to protect themselves in this way.

Among aviators the ear protectors are being generally adopted, as it is found that by their use the voice can be heard above the noise of the engine; the sounds of the engine can be analyzed, and any unusual element detected.

FIRST LIEUTENANT.—Efficiency in cleanliness and sanitary work on board ship has been greatly promoted by the establishment of the position of first lieutenant. This officer, working in harmony with the medical officer, insures the proper execution of sanitary regulations.

SPIT KITS.—The use of wooden spit kits should be abandoned as fast as they can be replaced by the new metal type; these are machine finished and pressed instead of soldered. Swabs should be boiled at least once daily and when not in use should be hung in the open air to dry instead of being placed, still wet, in a dark corner or locker. Dishcloths should be boiled and then dried thoroughly after each meal and kept in a clean place, protected from flies or roaches.

FIRST AID.—Instruction in first aid is of great importance, since the construction of modern battleships is such that transportation of wounded during battle is possible only to a very small extent, and those injured in turrets and isolated places are dependent entirely upon the skill of others present at the time.

First-aid instruction as given by line officers is not a medical or a humanitarian but a military activity. It is military in that it aims to keep as many men as possible at their fighting stations, and if properly carried out it would tend to lessen the demoralization that might follow the appalling spectacle of a man bleeding freely from an inconsequential wound, which he himself might very properly attend to if instructed in the means of doing so. This instruction of the men by their division officers as a part of the daily drill and under conditions simulating as closely as possible those existing in battle is the best method of teaching the principles of first aid so that they will be retained in the minds of the men during the excitement of battle and applied when needed. Ability to apply these principles and confidence in the ability of others to do so will go far to avoid demoralization among turret crews or other groups of men when surrounded by wounded. The psychologic aspect is thus of no less importance than the physical.

More attention should be given to this instruction; it should be carried out more systematically, and should be a part of the daily drill of every division under actual battle conditions as closely as they can be duplicated.

One medical officer reports that interest in the subject has been increased and maintained by competitive trials in first aid and resuscitation of the apparently drowned between teams from different divisions of the crew, prizes being offered for the team making the best showing.

Ships of the Naval Auxiliary Service have very limited opportunities for medical attention, and instruction in first aid to their crews would therefore be of the greatest value. Such instruction could be given when vessels of this service are in the vicinity of ships having medical officers.

HOSPITAL SHIPS.—The presence of the hospital ship with the fleet has been invaluable for the diagnosis and treatment of special diseases and as a base and supply ship for expeditions. The medical circulating library and the opportunities afforded medical officers of the fleet for keeping in touch with medical progress have greatly widened the scope of usefulness of this ship. The need for a specially designed hospital ship in each fleet is urgent.

TRANSPORTS.—The one transport provided in the appropriation bill of March 4, 1913, will relieve, to some extent, the almost intolerable conditions existing on the vessels at present used for this purpose. These vessels are not designed for such duty, and when they are required to carry several hundred men and officers in addition to their regular complement the deficiencies in ventilation and equipment and the overcrowding greatly menace the health of all on board, especially when they are required to remain on the ship for considerable periods, as not infrequently happens. The frequent calls for expeditionary forces of marines make it important that at least one properly designed and equipped transport of sufficient size be provided for each coast.

TORPEDO BOATS AND DESTROYERS.—Conditions of life on board the smaller vessels are necessarily far from ideal, and on the torpedo boats constructed a generation ago the unfavorable surroundings reached the maximum. With the progressive increase in size and the development of the present type of destroyer a great improvement in sanitary environment has been accomplished. For several reasons this duty is sought after in spite of the fact that these ships are underofficered and the men overworked. It has been noted on some of the destroyers that in cold weather sweating of the sides is so great as to keep the decks of the living compartments constantly wet. The presence of a Hospital Corps man on each vessel of this type is very desirable, and the effort to supply this need has been successful despite the shortage in men. A cruising parent ship for the Pacific Torpedo Flotilla is urgently needed in order that the sick and injured on the vessels may be afforded facilities for proper care.

AUXILIARIES.—Periodic inspection of vessels of the Naval Auxiliary Service shows the need for an efficient system of vaccination which will insure the maintenance of immunity against smallpox in this service, 57 unvaccinated men having been found on one collier. This is of importance because of the frequent close contact of the auxiliary crews with those of naval vessels. The possibility of crippling the fleet by smallpox on a much-needed collier must be considered. Applicants for the Naval Auxiliary Service should be examined by medical officers of the Navy at the time of their acceptance to determine their physical fitness and to insure proper vaccination. The absence of medical officers on these vessels makes it important that their crews receive periodic instruction in first aid.

RECEIVING SHIPS.—The Bureau renews its recommendation that receiving ships be replaced by properly built and equipped barracks. Hygienic measures would thus be simplified, and the health, comfort, and contentment of the men would be greatly increased.

RESERVE FLEETS.—The present plan of keeping vessels in reserve instead of placing them out of commission has many advantages from a sanitary viewpoint. When ships go into reserve provision is made for the retention on board of the full outfit of medical and

surgical supplies, an effort is made to keep a reliable hospital corpsman detailed to each ship in charge of the stores and for emergency work, and a medical officer is detailed for each group. The ships are frequently inspected and an excellent sanitary condition has been maintained, such as would not be possible on a ship placed out of commission.

SANITARY CONDITIONS AND MEASURES ASHORE.

Further experience with the liability act of May 30, 1908, confirms the belief that the 15-day rule is an incentive to dishonesty. A man receives no compensation unless he is disabled for 15 days, and there is a tendency in certain cases of slight injury to resort to any expedient to extend the time to the necessary 15 days.

Physical examination of applicants before their acceptance as navy-yard workmen was directed by presidential order of December, 1912, and this will prevent many abuses of the act such as have been reported in the past. The additional work involved in carrying out the provisions of this order has made it necessary to detail an additional medical officer for duty at many of the navy yards, thus accentuating the shortage in the personnel of the Medical Corps.

Marine guards stationed at hospitals have been of great value in maintaining order and discipline, and it is hoped that circumstances will permit such guards to be established at the larger hospitals where hitherto it has not been possible. The guard at the naval hospital, Yokohama, was discontinued in July, 1912, and has been superseded by Japanese watchmen.

Electric food warmers have been installed experimentally in the diet kitchens of several hospitals; the food is cooked in a central diet kitchen and sent to the various wards; where it is kept warm with the electric appliances until served. This arrangement has proved to be both satisfactory and economical.

A method has been adopted whereby mess gear and kitchen utensils for naval hospitals can be drawn from general storekeepers at navy yards. The Bureau believes that by this system a uniform and better equipment will be accomplished at a considerable saving in cost.

The new regulations have been of great help by defining the conditions governing medical attendance to officers and men and their families. This practice is of benefit to the medical officers as well as to the patients, and its extension is favored so far as the other duties of the medical officers are not made to suffer. From July, 1912, to July, 1913, the medical officers attached to the Naval Dispensary, Washington, attended to 5,354 house and 1,893 office calls.

NAVAL ACADEMY, ANNAPOLIS, MD.—Sanitary conditions have been good and the sickness less than in the preceding year. The new academy was completed during the year and the last of the old buildings torn down, thus doing away with their bad sanitary arrangements. Unsatisfactory conditions still exist just outside the wall, where are numerous privies, stables, and barrooms; also surface drainage.

The dairy has been of great benefit; a considerable reduction in the number of cases of gastro-intestinal diseases and gains in weight by the midshipmen were accredited to the excellent milk supplied by it.

Complaints about the illumination of Bancroft Hall caused this to be made the subject of study by a special board, and the recommendations for improvement in this respect have been carried out.

NAVY YARD, BOSTON, MASS.—The sanitary condition of the yard has been satisfactory, and minor defects disclosed by the monthly inspections have been remedied promptly. Prevention of rats and flies has received especial attention. Conditions in the prison have been improved, and steps have been taken to provide a dry-heat sterilizer for clothing and bedding.

NAVAL STATION, GUANTANAMO, CUBA.—During the period when plague was present in Habana special precautions were successfully taken to prevent its introduction into this station. A permanent isolation camp has been established on Caracoles Point for the care of contagious diseases occurring in the fleet. As a result of the absence of current and the slight range of the tides in Guantanamo Bay the great amount of waste from the fleet is not quickly removed from the vicinity of the ships, but remains in such concentration as to be a menace to health, particularly when swimming, and frequently fecal matter is deposited along the beaches in quantities sufficient to form breeding places for flies. The problem of suitably providing for the removal of these waste matters demands serious consideration.

NAVAL STATION, GUAM.—The general health has been good. Quarterly examination of all enlisted men for intestinal parasites has been continued. The work of screening, grading, and filling has progressed and the new system of garbage disposal put in operation, greatly improving conditions.

The native population increased 329 during the year, being 12,657 on January 1, 1913. The health of the natives is improving as a result of the sanitary measures adopted and the general education of the younger generation. An increased water supply is needed and certain defects in the present system should be remedied. As soon as the Agaña sewer system is completed, arrangements should be made for all privies to be connected with it.

During 1912 there were admitted to the hospital 2,258 supernumeraries; 2,234 were natives, of whom 1,246 were children admitted for treatment for intestinal parasites. The daily average of persons receiving treatment at the native clinic was 170. About one-sixth of the adult natives have pulmonary tuberculosis, and the glandular form is found in many children. Infection with intestinal parasites is almost universal, and dirt from the floors of native houses and from the finger nails of children was found to contain the ova of several species.

Two house-to-house inspections of the whole island have been made for the purpose of discovering and segregating lepers and securing proper treatment for those having gangosa.

NAVY YARD, MARE ISLAND, CAL.—The water supply for this station is a very serious problem; for at least a part of the year it was necessary to use water of doubtful purity. Mosquitoes have been numerous, largely because of conditions not under the control of the yard authorities. The method of housing the men of the barracks is greatly improved under the present arrangement, whereby groups of men are placed in several small houses.

NAVY YARD, NEW YORK, N. Y.—The general sanitary and health conditions for the year were good. Under direction of the Bureau of Mines tests have been conducted with devices for protecting men working in poisonous fumes, and over a score of men have been fully trained and received certificates for mine-rescue workers. The dispensary has been much improved by additions and repairs. Changes in arrangement of the sewers have lessened the concentration of sewage in the Wallabout basin.

An arrangement devised by the public works officer for carrying off the discharges of ships, thus allowing use of the baths and heads of a ship in dry dock, has been tried and found successful. This will greatly improve the sanitary conditions on board a ship which is in dry dock and do away with the necessity of going out on the dock to use baths and toilet.

NAVY YARD, NORFOLK, VA.—The conditions existing just outside this yard form the most difficult sanitary problem, but it is expected that with the cooperation of the municipal authorities these conditions can be remedied in time. New arrangements for garbage collection and disposal have been made, and this work is being performed in a satisfactory manner by a special sanitary squad. Conditions existing on the Schmoele tract have received careful study and the work of correcting them has been begun.

NAVY YARD, PHILADELPHIA, PA.—The general sanitary condition has been good. Toilet facilities have been provided for ships of the reserve fleet by erection of buildings. Insanitary conditions exist in the part of Philadelphia adjacent to the yard; numerous piggeries are in operation; night soil is used for fertilizing vegetables; breeding places for mosquitoes are maintained in the large pools of stagnant water.

In 12 months a sum approximating a quarter of a million dollars was spent in Philadelphia for provisions, about one-half being for vegetables, many of which are eaten uncooked. A large part of the vegetables used at the yard are raised on the truck farms of the southern part of the city; on these farms night soil collected from the privies and cesspools of the city is used as fertilizer, and a member of the Department of Health of Philadelphia has stated that this includes the excretions of 1,600 typhoid patients. The commandant has stated, "the condition in South Philadelphia in this respect is only equaled on this globe by the practice in China."

The health of the 7,000 to 10,000 men at the navy yard, as well as that of the people of Philadelphia, is menaced by this benighted policy of a great city.

NAVAL STATION, OLONGAPO, P. I.—Work to eliminate the mosquito pest has been carried on actively. Overhauling of the dispensary building has much improved conditions. The danger of plague has been appreciated and all precautions to prevent it have been carefully observed.

The health of the native population has been good; the native free dispensary has been of great service in relieving suffering and giving instruction in sanitary matters. Infantile beriberi has been prevalent and much study is being devoted to it.

NAVAL STATION, TUTUILA, SAMOA.—Sanitary conditions have been satisfactory and the health of the personnel has been excellent.

Among the natives epidemics of typhoid fever, dengue, and parotiditis epidemica have occurred, and tuberculosis has been prevalent. Most of the deaths among the native Samoans are due to tuberculosis, filariasis, cancer, and pneumonia. "Devil doctoring" is still practiced extensively, and several deaths have been attributed to this treatment.

Clinics for natives are held four times a week at the Samoan Hospital, and 2,944 attended during the year. Salvarsan had been administered to 107 cases of frambesia up to January 1, 1913, with excellent results. Articles containing information on yaws, dengue, tuberculosis, and other prevalent diseases have been printed in the native newspaper for educational purposes.

By order of the Department, based on a recommendation of this Bureau, a school has been established in Samoa for the purpose of training native Samoan women in the principles of nursing, with a view to their making use of this training among their own people. The course is to be as thorough as practicable, due consideration being given to the education and environment of those under instruction.

NAVAL HOSPITAL, CHELSEA, MASS.—The new hospital is approaching completion but probably will not be occupied before spring or until the power house is ready. As the new building has not a greater capacity than the old, it may be necessary to utilize the old building for any excess of patients. The laboratory facilities have been increased so that complement fixation tests can be performed. In the surgical department 374 operations were performed during 1912, 96 being major operations.

NAVAL HOSPITAL, GREAT LAKES, ILL.—This hospital was closed on May 19, 1913, owing to the unnecessary cost of maintaining so large an institution for the size of the complement. The sick are now being cared for in a suitable manner in the enlarged sick quarters.

NAVAL HOSPITAL, LAS ANIMAS, COLO.—The Bureau renews its recommendation of other years that steps be taken toward the ultimate abandonment of this hospital, which is used as a tuberculosis sanatorium. The vegetable garden has been a paying investment besides furnishing employment for those able to work. Results of treatment at the hospital are gratifying, but men having had tuberculosis are not suitable for return to the service.

NAVAL HOSPITAL, NARRAGANSETT BAY, R. I.—The new hospital was opened to receive patients on April 15, 1913, and the old building turned over to the commandant to be used as a storehouse.

NAVAL HOSPITAL, NEW YORK, N. Y.—A new water-supply system has been installed, which increases the amount available. The new garbage incinerator has proved to be of great value. A small fire in March, 1913, made necessary certain alterations in the heating system.

NAVAL HOSPITAL, NORFOLK, VA.—During the year 2,179 patients were treated in this hospital, which, because of its location, is always more heavily taxed than any similar institution of the Navy. The equipment and facilities are excellent, except that a proper building for contagious diseases is needed.

NAVAL HOSPITAL, PHILADELPHIA, PA.—The presence of the reserve fleet at the League Island Navy Yard has considerably increased the

importance of this hospital. The proposition to dispose of the present property and erect a hospital at the navy yard has been revived. The present site is unsuitable and inaccessible, transfer of patients being accomplished with undue delay and discomfort.

NAVAL HOSPITAL, OLONGAPO, P. I.—There are many drawbacks to the present system of using the *Relief* as a hospital at this place, but it suffices for immediate requirements, and it is hoped that with necessary repairs it can be used until a suitable hospital is provided. The number of patients treated in this institution shows the necessity for maintaining hospital facilities at this place.

NAVAL HOSPITAL, CANACAO, P. I.—Sanitary conditions here have greatly improved and a marked decrease in mosquito and water borne diseases occurred. The native clinic treated 4,953 cases during 1912.

NAVAL HOSPITAL, PORTSMOUTH, N. H.—It is anticipated that the new hospital at this place will be ready for occupancy before January, 1914.

NAVAL HOSPITAL, PUGET SOUND, WASH.—Patients were transferred to the new hospital on January 3, 1912. With the opening of the Panama Canal the importance of this hospital will be greatly increased and an additional wing will be needed.

NAVAL HOSPITAL, WASHINGTON, D. C.—Improvements in Potomac Park have remedied some of the unfavorable conditions at this place. The tunnel connecting the sick officers' quarters with the hospital has been completed and makes it possible to transfer patients for operation without exposing them to the weather.

NAVAL TRAINING STATION, GREAT LAKES, ILL.—The sanitary conditions at this place have been excellent. The water supply has received close attention and analysis has shown it to be satisfactory.

NAVAL TRAINING STATION, NEWPORT, R. I.—Efforts have been made to prevent the overheating of living and working spaces, and as a result the number of cases of pneumonia has been reduced to one-fourth of the average for the preceding 12 years. The Swedish system of exercise was inaugurated in October, 1912, and the results are stated to be excellent.

NAVAL TRAINING STATION, SAN FRANCISCO, CAL.—The health of the personnel has been very good, and a considerable improvement in the number of admissions and sick days is reported.

SANITARY CONDITIONS AND MEASURES IN GENERAL.

The opinions as to the harm done by competitive athletics which involve extreme physical strain, expressed in the reports of the last two years, have received widespread notice, and editorials or articles on the subject have appeared in publications of many sorts, nearly all agreeing with the opinions expressed. It is well recognized that a man having entered upon training for competitive athletics has put his hand to the plow and can not turn back, but throughout his life must continue to exercise if he would avoid degeneration and a decline from the high plane of development to which his training has raised him. This works most harm when the strain thrown on muscles and organs is greatest, as in long-distance rowing and running races.

General indulgence in athletics is desirable, and the mental relaxation secured in this way is even more complete and more profitable than that obtained by prescribed physical drills, and the ideal to be desired is for every man to take an interest in some form of physical diversion other than the routine exercises that are required.

The benefits of systematic physical exercise are well illustrated by the report of the medical officer of the department of physical training at the Naval Academy, which indicates that the first and second classes showed a considerable loss of strength during the period from April to October, 1912, when they had little opportunity for systematic physical exercise. The third class continued the regular drills throughout the summer and showed little change in strength.

Midshipmen are not allowed to participate in crew races longer than the Henley distance ($1\frac{5}{8}$ miles) or in running races longer than the quarter mile, by order of the superintendent, and it is believed that this will prevent a great part of the damage due to excessive strain.

The modified Swedish system of physical exercise developed by Surg. J. A. Murphy has produced excellent results at the Naval Academy, and he has been detailed to instruct chief petty officers at the several training stations in the details of the system. These men, when qualified as instructors, may be utilized to introduce the system on board various ships, thus extending it to the whole service.

A large number of the officers of the Navy avail themselves of any opportunity that may present for active exercise in the open. The monthly 10-mile walk frequently interferes with important duty; it is exacted of officers who are standing watch and others whose duty requires them to walk 8 to 10 miles daily, such as marine officers visiting sentries at various posts. Compulsory monthly exercise, which is irksome and irritating, in no way meets any of the requirements of approved methods of physical training and is in direct conflict with the teachings of the Swedish system now being introduced into the service. To derive the best results from outdoor exercise it should be pleasurable and, if possible, have the spirit of contest, or at least have a happy coordination between the muscular action and the mental impulse directing it.

On shipboard, men of the clerical force, hospital corps, and engineer's division, the ones most frequently excused from exercise in the open air, are most in need of it, as there is a strong tendency for them to spend their entire time below decks.

Recent changes in the uniform of officers and men have no relation to efficiency or sanitary value, and it is recommended that steps be taken to remedy some of the defects from this standpoint that exist in the present uniform.

The chief petty officers' white coat should be so altered that it can be worn without starched collar and shirt, as are the coats of the commissioned and warrant officers, thus increasing comfort and decreasing expense.

Reports from officers accompanying expeditions on shore participated in by men of the Navy call attention to the necessity of adopting for these men a uniform which will be adapted for the conditions of such service and will not handicap them as does the present one. The blue uniform is too hot for tropical wear and too costly for

such rough work as expeditionary service entails. The white uniform soils quickly and soon acquires permanent stains. It makes a brilliant mark in the field and an excellent target on the firing line; the bluejacket is thus exposed to much greater danger than the marine who is clad in khaki. The material is not suitable for cool nights, and after a rain or heavy dew the wearer quickly becomes chilled. It is worth while to consider seriously substituting khaki for white uniforms of both officers and men.

The white hat is ill adapted for summer wear, since it provides no protection from the sun to the eyes or the back of the neck.

The present officers' cap is widely criticized because it provides little protection from the sun. It is easily blown off, and to prevent this it is necessary to press it firmly on the head, causing headache.

Expeditionary forces of marines are accompanied by medical officers, and for such officers there is no authorized uniform; the custom is for them to purchase from the quartermaster enlisted men's khaki uniforms, and as a result all sorts of variegated makeshifts are observed. A definite uniform should be prescribed, so that the officers may equip themselves properly for such duty.

Modern advances in medico-military science have not resulted in a symmetrical growth of knowledge, and with all our careful study of the principles of physical and mechanical efficiency of men and ships a proportionate consideration has not been devoted to the principle expressed by Napoleon's statement that "in war the moral is to the physical as 3 to 1," a dictum indorsed by the highest authorities in the field of military knowledge.

That mental equipment and training for the operations of war are at least as important as material preparation should be continually in the minds of all, and this subject deserves more study in order that methods may be developed and standards established whereby the temperamental types can be classified and those who are desirable can be distinguished from those who are temperamentally unsuited for military activities. This study must be applied equally to officers and men.

Certain lectures delivered at the Naval War College during the year indicate that the importance of study in this direction is receiving more general appreciation, and its more active prosecution would be well repaid by the results obtained.

Rigid tests have been prescribed for officers and men who apply for aviation duty with a view to excluding all except those having perfect control of their physical and mental faculties.

Active measures against flies and mosquitoes have been continued. On several ships screening of galleys has been of great aid in reducing the number of flies. In the island possessions the work has been prosecuted actively and with success, attention being devoted primarily to prevent breeding and secondarily to destruction of adults. Screening of hospitals, recreation buildings, and living quarters has been advanced as much as possible during the year, and it is hoped that this protective measure may be continued to general completion. The beneficent result is indicated by the reduction in fly and mosquito borne diseases.

The sporadic appearance of plague in many ports in different parts of the world, and the possibility of plague-bearing rats gaining entrance to vessels of the Navy, or the ports of the United States,

makes it necessary to take every possible precaution against the harboring or breeding of rats in ships or stations under the control of the Navy. Cooperation between medical and line officers in the work so far accomplished has been excellent, and the reduction in the number of rats generally satisfactory. Rat proofing of buildings should be continued, and this feature should be considered in all new construction. A few infected rats and an occasional case of plague have been found in some of the island possessions, but no large epidemic has occurred.

Installation of vacuum cleaners at naval hospitals has proved eminently satisfactory, and it is believed that this system should be incorporated in all suitable buildings to be constructed in the future. Portable cleaners in buildings already constructed and on board ships would be a valuable addition to the present equipment and would lessen the danger of transmission of disease.

Illumination on the newer ships is generally reported as satisfactory, but on the older ones serious defects exist which are difficult to remedy. It has been suggested that a ship in reserve be designated for experiments to be made by a board to determine standards for location, power, number and kind of lights, as well as the color and finish of walls and furniture which will cause the least possible damage to the eyes.

Changes in the lights in Bancroft Hall have been made on the recommendation of a board appointed to study the subject; a considerable improvement in conditions is reported.

Tungsten filament lamps have been found to withstand the shocks of target practice and the general installation of this type for reading lights will be of value.

More opportunities than usual were offered in 1912 for affording humanitarian aid. After the serious earthquake in Turkey, August, 1912, the medical officer and men of the Hospital Corps of the *Scorpion* visited many of the afflicted villages and were able to do much toward relieving the injured and starving. During the Balkan War this officer worked with the Red Cross in aiding the wounded at Pera.

After the Battle of Azua, during the Santo Domingo revolution, medical officers and hospital corpsmen of the Navy established a field hospital, where many of the wounded were dressed and necessary operations performed, thus saving many lives which undoubtedly would have been lost without such assistance. Many wounded were treated also after battles at Puerto Plata and Monte Cristi.

At Vera Cruz, Mexico, the medical officer of the *Des Moines* assisted in the relief of those wounded during the fighting in that neighborhood during October, 1912.

Three medical officers and hospital corpsmen of the Navy were sent to aid in the relief of sufferers from floods in the valley of the Mississippi in May, 1913, and valuable administrative and sanitary work was accomplished by them.

Effort is made to impress on all persons associated with the Navy the important relation of sanitary principles to the health of the service. At navy yards printed instructions are issued and placards posted in conspicuous places; lectures also have been delivered on important health topics. In the island possessions articles have been published in the native newspapers giving elementary rules for avoiding preventable diseases.

A medical officer is a member of the board for inspection of the buildings occupied by the Department in Washington, and the recommendations of this board, based on monthly inspections, have led to a great improvement in the sanitary conditions existing in these buildings.

Attendance of medical officers as delegates to meetings of medical societies continues to be of great value, keeping the Medical Corps in close touch with the best element of the profession and aiding in the early adoption of advances in knowledge and new methods of combating disease.

Many officers have utilized their leave period by visiting the centers of medical teaching at home and abroad to take special courses at their own expense. The Bureau is of the opinion that this should be authorized by the Department when it does not conflict with their other duties, so that such officers may be in a duty status while engaged in this work.

It has been found necessary to discontinue the postgraduate courses formerly given at the Naval Medical School owing to the shortage of medical officers and the difficulty of ordering them to Washington for such instruction without interfering with other requirements of the service. The regular winter course at the school was terminated in February, 1913, before the completion of the work, so that those in attendance might be available for duty with the expeditionary force of marines.

In several States medical officers have been ordered to confer with and lecture to the Medical and Hospital Corps of the Naval Militia, and this has helped members of the militia to gain a better idea of the duties they would be called upon to perform in war. It involves no expense, since the work is done by medical officers in addition to their other duties, and it is hoped that arrangements can be made to carry out such conferences in a larger number of States.

The custom of detailing a medical officer to attend the summer conference at the War College has been continued. Not only is this of advantage to the medical officer in giving him a broader view of the relation of his special field to the operations of the Navy as a whole, but his participation in the discussions appears to be appreciated by his confrères.

Requests are frequently received by the Bureau of Medicine and Surgery for medical officers to fill positions which require special training, since the civil profession looks to the Federal services for knowledge along certain lines that are not within the scope of the duties of the general practitioner. While the value of this cooperation is appreciated and a number of officers have been detailed on such special duties, the shortage in the corps frequently prevents compliance with requests of this nature. The diversity of these duties is illustrated by the following partial list of the activities of medical officers of the Navy aside from the regular duties of this corps: Membership on board of visitors, Government Hospital for the Insane, and various civil hospitals; lecturing on tropical medicine, parasitology, and surgery at various medical colleges; teaching physical training; special work with the pellagra commission and with the Philippine Government; investigating problems of air supplies in submarines; the Alaskan coal fields; and immunization against tuberculosis.

Forms D (inventory of property), F (quarterly abstract of patients), G (hospital ticket), and K (statistical report) have been replaced by new forms. A form for notification of transfers of members of the Hospital Corps has been adopted. The preparation of clinical cards is no longer required.

The revised supply table will be issued shortly. A new nomenclature of diseases and injuries has been adopted which follows closely the Bellevue nomenclature, with certain modifications to adapt it to the needs of the Navy. The Manual for the Medical Department is in course of preparation. Recent legislation has made necessary the preparation of new circulars of information for those desiring to enter the various corps.

The medical equipment for expeditionary forces is being revised, and when completed will consist of equipment for the individual, the company, the regiment, and the brigade.

Plans for sanitary bases and for the evacuation of the wounded in time of war have been prepared.

PERSONNEL.

MEDICAL CORPS.—During the year ending June 30, 1913, five medical officers were admitted to the corps and 15 men were lost by death, retirement, or resignation, making the strength of the corps 292. The vacancies now number 55.

Each year the duties of medical officers become more exacting and the responsibilities greater. Each year the difficulty of inducing properly qualified medical men to enter the corps becomes more marked in spite of the effort made to place before recent graduates and internes in the hospitals the advantages of the Medical Corps as a career. The inducements offered are not sufficient to attract men of the necessary qualifications, and there is imperative need for a reorganization of the corps which will afford to prospective candidates more favorable opportunities for advancement. For example, it is not to be presumed that a physician with any hope of success in civil life will take up a naval career with the prospect of remaining in a junior grade until he approaches the retiring age of 62.

MEDICAL RESERVE CORPS.—This corps was established by the act of August 22, 1912, and a large number of distinguished men have already been commissioned.

Under the present policy candidates for the Medical Corps are examined for entry into the Medical Reserve Corps first; after completing the course of instruction at the Naval Medical School they are further examined, and if found qualified are commissioned in the Medical Corps. In this way it is hoped to increase the number of candidates, since it will no longer be necessary for them to bear the expense of coming to Washington for the examination.

DENTAL CORPS.—Under the provisions of legislation authorizing the establishment of a Dental Corps, 15 dentists have already been appointed and ordered to duty. It is believed that there will be no difficulty in filling the corps with well-qualified men. The ability to provide dental work of a high grade has made it possible to accept many recruits with defective teeth whom it would otherwise have been necessary to reject.

HOSPITAL CORPS.—On July 1, 1913, the Hospital Corps consisted of 282 hospital stewards, 507 hospital apprentices, first class, and 445 hospital apprentices, a total of 1,234. The number of hospital corpsmen deemed necessary for the Navy with its present strength is between 1,500 and 1,550, divided in the following classes: Hospital stewards, 325; hospital apprentices, first class, 750; hospital apprentices, 425 to 475. The above figures show that the greatest deficiency is in the rating of hospital apprentice, first class, and in spite of the very active assistance of the Bureau of Navigation, reenlistments in this rating are far below the number desired.

The great shortage in the Hospital Corps was felt markedly during the several periods when marine expeditionary forces were in the field, as at times it was necessary to strip the hospitals and shore stations of their Hospital Corps complements to a deplorable extent.

It is believed that should a rating be established between that of hospital steward and that of hospital apprentice, first class, it would stimulate reenlistment of men who are capable nurses but who have not sufficient knowledge and ability to pass the examination for hospital steward, there being such a vast difference in the requirements for the two ratings.

The course of instruction for members of the Hospital Corps was instituted by order of the Department, upon recommendation of this Bureau, January 18, 1911, for the purpose of securing uniform and efficient instruction of members of the Hospital Corps. About 900 hospital apprentices, first class, and hospital apprentices receive instruction in the following subjects at hospitals and on all ships: Medical and surgical nursing; materia medica and practical pharmacy; emergency surgery and first aid, application of splints and occlusive dressings; bandaging; anatomy and physiology; transportation methods; aseptic operation drill; sterilization; preparation of patient for operation; hygiene, personal and ship; venereal prophylaxis; medical records; care of instruments and medical stores. The value of this course of instruction is demonstrated by the readiness with which these men obtain excellent positions in civil institutions after leaving the Navy.

NURSE CORPS.—Since last report 50 new members have been appointed, the corps numbering to date 130. As compared with last year, the percentage of resignations has materially increased, 28 nurses having left the corps during the year. Two definite causes may be given. First, the protracted period of discomfort when the comptroller's decision of December 21, 1912, directed the pay officer to check against the accounts of the nurses the difference between 40 cents and 75 cents commutation for subsistence. The checkage of these large amounts caused great hardship, and the effect was the resignation of a number of nurses as soon as their indebtedness to the Government had been discharged.

The clause attached to the Navy appropriation bill, which was intended to remove the checkage, has been interpreted by the comptroller to mean relief for the disbursing officers and has failed in being effective for the last quarter of 1912 for the nurses stationed at New York and Washington.

The second cause which has resulted in resignations is the large number of more lucrative positions which are offered outside the service.

The number of nurses has been increased at the 10 stations where nurses are on duty, and the scope of their work has broadened in the continued effort to establish and maintain a standard of responsibility and method of instruction.

CONSTRUCTION.

COMPLETED.—The naval hospital, Narragansett Bay, was completed and occupied on April 15, 1913; a temporary heating system was installed at small expense, the new plant not being completed. The hospitals at Chelsea and Portsmouth have been completed, and the latter will be occupied at an early date; at the former it was necessary to install a temporary heating system, pending the completion of the new plant, and the hospital will be occupied after this is completed. The annex to the naval dispensary and sick quarters, Tutuila, Samoa, was completed and occupied in October, 1912. The new operating pavilion at the hospital, Guam, is now in use. The isolation camp buildings at Guantanamo have been completed and were occupied in February, 1913.

UNDER CONSTRUCTION.—Heating plants are being built for the hospitals at Chelsea and Narragansett Bay.

CONTEMPLATED.—The following construction is urgently needed: Navy yard, Charleston, S. C., a hospital; naval hospital, Narragansett Bay, R. I., quarters for medical officers; naval hospital, Norfolk, Va., contagious-disease building; naval hospital, Puget Sound, an additional wing, contagious-disease building, and quarters for medical officers.

The following construction is desirable: Naval hospital, Chelsea, Mass., an additional wing, laundry, morgue, stable, conservatory, and garage, and extension of the sea wall; naval station, Guam, quarters for the Nurse Corps and for the Hospital Corps, laundry; naval hospital, Mare Island, nurses' home, contagious ward, officers' quarters, addition to mess hall, and recreation room; naval hospital, Norfolk, stable and garage, garbage crematory, extension of the wharf, quarters for medical officers and for the Hospital Corps; naval station, Olongapo, a hospital and a dispensary at the navy yard; navy yard, Philadelphia, a dispensary building; naval station, Port Royal, a hospital; navy yard, Puget Sound, an additional ward, officers' quarters, infectious-disease ward, and garage.

RECOMMENDATIONS.

1. The detail of a properly qualified medical officer as inspector general of the Medical Department, to serve under the aid for inspections.

2. That arrangements be made, as at the New York yard, to continue the use of heads and baths on ships in dry dock.

3. Erection of sanitary barracks provided with means for recreation at navy yards for the accommodation of the crews of ships undergoing extensive repairs.

4. Substitution of a sanitary unit system of barracks for receiving ships.

5. The appointment of a board for the study of the subject of clothing and uniforms, and that a representative of the Medical Corps

be assigned to this duty for the purpose of discussing the hygienic features of the question.

6. The appointment of a board for the study of the subject of illumination on board ship and elsewhere, and that a representative of the Medical Corps be assigned to this duty for the purpose of discussing the hygienic features of the question.

7. The appointment of a board for the study of crews' heads, and that a representative of the Medical Corps be assigned to this duty for the purpose of discussing the sanitary features of the subject.

8. Abolition of prison ships.

9. Construction, on accepted plans, of a hospital ship for each fleet.

10. That specially designed transports be provided for expeditionary forces.

11. That the tours of duty of ships in Central American waters be shortened.

12. Assignment of medical officers of the fleet to brief periods of duty on the hospital ship.

13. That a higher physical standard be required of those enlisting as, or changing rate to, coal passer.

14. That garbage incinerators be installed on all ships.

15. That laundries for the crews' clothing be installed on ships when practicable.

16. Strict regulation of sanitary conditions of ships' barber shops.

17. That first-aid instruction by line officers be performed more systematically.

18. That a preparation for prevention of venereal disease, to be used immediately after exposure, be placed on sale in the canteens.

19. That crews of Naval Auxiliary Service vessels be inspected frequently for vaccination and receive instruction in first aid.

20. That the sale of drugs in canteens be abolished.

21. That the conditions under which painting and chipping are done shall be strictly regulated so as to prevent lead poisoning.

22. That 2 per cent of the crew of ships be assigned permanently to the surgeon's division during battle drill.

23. Compulsory use of identification tags by all officers and men during battle drill.

24. That all persons on ships be required to spend as much time as possible in the open air each day.

25. That marine guards be stationed at all naval hospitals.

26. That the monthly physical exercise for officers be abolished.

27. That before men are transferred to ships from training stations or receiving ships they be isolated for a period long enough to prevent the spread of infectious diseases.

28. That a special study be made of methods for determining the mental and temperamental fitness of officers and men.

29. Forfeiture of pay by all persons on the sick list with disease of venereal origin.

30. That the attendance of medical officers on special courses of instruction be authorized.

31. That a further effort be made to improve the sanitary conditions surrounding navy yards, particularly that at Philadelphia.

32. That steps be taken toward the ultimate abandonment of the naval hospital, Las Animas.

33. That a definite uniform be assigned for medical officers on duty with marine expeditions.

34. That substitution of khaki for white uniforms of officers and men be considered.

C. F. STOKES.

REPORT OF THE MAJOR GENERAL COMMANDANT OF THE UNITED STATES MARINE CORPS.

HEADQUARTERS UNITED STATES MARINE CORPS,
Washington, October 11, 1913.

To: The Secretary of the Navy (Personnel).

Subject: Annual report of the condition and service of the United States Marine Corps for the fiscal year ending June 30, 1913.

Reference: (a) Letter, Acting Secretary of the Navy, 5087-111, July 15, 1913.

1. In compliance with the department's instructions contained in reference (a), I have the honor to submit the following report of the conditions and service of the United States Marine Corps for the last fiscal year.

2. During the period covered by this report either the undersigned or officers of the Adjutant and Inspector's Department have made inspections of all the posts of the Marine Corps, with the exception of Guam, and of the detachments on board all receiving ships. The reports of these inspections show a satisfactory condition of the corps as to health, discipline, and efficiency. Adverse criticism has been made of some of the barracks, due to their being obsolete as to construction and inadequate as to capacity, and to lack of proper accessories, such as combined drill hall and gymnasium and proper facilities to provide legitimate amusements within the garrison for the enlisted men thereof. Where such amusements are not provided the tendency is for the men to seek diversion outside the post under conditions that can not but have a bad effect and which frequently result in desertion. So far as possible these conditions are being overcome, but there can be no decided improvement except by special appropriations from year to year.

PERSONNEL.

3. As a result of a careful supervision of the recruiting service and of the recruit depots from these headquarters, it is believed that there has been a considerable improvement in the standard of the enlisted personnel of the Marine Corps, and at the same time the corps has been recruited to its full authorized strength.

4. The present strength of the Marine Corps is inadequate to properly perform all its legitimate duties at all times, i. e., when expeditions are absent from the United States the complement of men at the navy yards, naval prisons, receiving ships, and other stations, have to be reduced to such an extent as to interfere with the efficiency of the stations concerned—to form two advance base regiments (one on each coast) will require on a peace footing practically

every officer and enlisted man now assigned to duty at navy yards, leaving the yards unguarded in whole or in part.

5. Under the department's policy of having the authorized enlisted strength of the Marine Corps one-fifth of that of the authorized enlisted strength of the Navy, the Marine Corps as authorized is at present 379 men short of its proper proportion; it is recommended that a representation be made to the Congress to provide for an increase as above, and in case additional men are authorized for the Navy, the number given above be correspondingly increased.

6. The proportion of officers to men in the Marine Corps is entirely too low, and on the expeditions during the past year, though every officer available was taken, the organizations were underofficered; the companies were generally of 120 to 130 men each. The present proportion is 1 officer (line and staff combined) to $34\frac{1}{2}$ enlisted men; this is about the proper proportion for company officers of the line, but when the necessary number of staff officers and field officers of the line, officers on detached duty, sick, en route to and from foreign service, etc., are considered, the proportion is entirely too small and it is believed that the proper one is 50 officers to 1,000 men; that is, 1 officer to 20 men. That this is not excessive is shown by the fact that the proportion considered proper for the infantry is $66\frac{2}{3}$ officers to 1,000 men.

7. It is recommended that the department adopt the policy of basing the number of officers of the Marine Corps upon the number of enlisted men authorized for the corps, and that the proportion of officers to enlisted men, which is now 1 officer (line and staff combined) to 34.5 men, be increased gradually to one officer (line and staff combined) to 20 men.

8. In view of the undesirability of increasing the commissioned personnel of the corps in time of peace in any one year by more than 10 per cent, it is recommended that the number of officers for the coming year be increased by 34. As the result of the examinations held in July a number of candidates, sufficient to fill existing vacancies, were found qualified but have not been commissioned as yet; as the course of instruction lasts approximately 15 months these officers will not be ready for duty until the spring of 1915, and any officers who may be authorized during the coming year will not be available before the 1st of January, 1916. In this connection, it is recommended that, hereafter, vacancies in the Marine Corps in the grade of second lieutenant be filled, first, by graduates of the Naval Academy; second, by meritorious noncommissioned officers of the Marine Corps; and third, in case the former two classes are not sufficient to fill existing vacancies at the end of the fiscal year by the appointment of persons from civil life, not under 18 nor more than 22 years of age.

FIELD CLERKS.

9. It is recommended that the status of field clerks of the Quartermaster's Department be changed and that the necessary recommendations be made to the Congress to the end that they be placed on the same footing as to pay and allowances as the general storekeeper's and paymaster's clerks of the Navy and clerks of the assistant paymasters of the Marine Corps, with the benefit of retirement, their

duties and responsibilities being very similar to those of the paymaster's clerks. At present these clerks receive \$1,400 per annum, and are stationed where their services can best be utilized for the efficiency of the department, and although civilians they accompany expeditionary forces. For their own protection in time of war, and in order that they would be obliged to obey proper orders without dispute or question, they should be given a military status and an appropriate uniform.

ENLISTED FORCE.

10. Gains and losses in the enlisted force during the year have been as follows:

Enlisted	2, 998
Reenlisted from Marine Corps	723
Reenlisted from Army	321
Joined from desertion	262
Prisoners restored	17
Total gain	4, 321
Discharged	2, 809
Died	33
Deserted	1, 021
Retired	22
Prisoners sentenced to dishonorable discharge	205
Total loss	4, 090
Net gain	272

DISTRIBUTION OF FORCE.

11. Summary of distribution of officers and enlisted men, June 30, 1913:

	Officers.	Enlisted men.
On shore duty:		
In the United States	200	5, 028
Outside United States	75	2, 193
On board ship:		
Receiving ships	4	522
Cruising vessels	51	2, 034

APPOINTMENTS, RETIREMENTS, RESIGNATIONS, DEATHS, ETC.

12. During the past year there have been 1 original appointment as first lieutenant, 21 appointments as second lieutenant, 4 retirements, 2 resignations, 2 resignations for the good of the service, 1 dismissal, 2 deaths on the active list, and 2 deaths on the retired list.

CAMPAIGN BADGES, GOOD-CONDUCT MEDALS, ETC.

13. Since the last report the following campaign badges and bars have been issued to officers and enlisted men of the Marine Corps:

Twenty-eight Civil War campaign badges,
Twenty-two Spanish campaign badges,

Eighteen China campaign badges,
Twenty-eight Philippine campaign badges, and
Forty-three Army of Cuban Pacification badges.

14. During the past year 739 good-conduct medals and 182 good-conduct medal bars have been issued to men of the Marine Corps.

15. Under date of June 7, 1913, the Treasury Department awarded to former Sergt. Harry W. Miller a gold life-saving medal for heroic daring in rescuing a man from drowning in North River, N. Y., on December 27, 1911.

16. Capt. Fred D. Kilgore received a commendatory letter from the Secretary of the Navy for plunging overboard in an attempt to rescue an officer who had fallen overboard.

INDEBTEDNESSES TO POST EXCHANGES.

17. The system of collecting, through the Paymaster's Department, all indebtednesses of enlisted men to post exchanges has been found to operate in a very satisfactory way.

DEPOSITS.

18. The number and size of savings deposits during the last fiscal year show that economy and thrift on the part of the enlisted personnel are still on the increase, and that the advantages of the system of savings deposits are fully appreciated. This system is made the subject of special instruction at recruit depots.

RECRUITING.

19. There are now 3 recruiting divisions, 17 districts, and 132 stations. The following statement shows the progress of recruiting during the fiscal year ended June 30, 1913:

	Fiscal year ending June 30—	
	1912	1913
Total number enlisted.....	4,310	4,042
Decrease in enlistments of 6.2 per cent.		
Net desertions.....	1,006	913
Percentage of desertions to total borne on rolls.....	7.3	6.1
A decrease of desertions of 9.2 per cent.		
Apprehended and surrendered from desertion.....	218	262
An increase in apprehensions, etc., of 20 per cent.		
Dishonorable discharge, sentence general court-martial.....	173	177
Reenlisted from Marine Corps.....	729	723
Percentage reenlisting from Marine Corps.....	16.9	17.9
Total reenlistments (including those from Army).....	998	1,044
Percentage of reenlistments.....	23.2	25.8
Discharges by medical survey within three months from date of enlistment.....	47	21
A decrease of medical surveys of 55 per cent.		
Cost per recruit, including transportation.....	\$60.85	\$61.42
Cost per recruit, excluding transportation.....	\$40.62	\$40.67

20. At the present time the Marine Corps is enlisted to its authorized strength.

21. On April 1, 1913, the recruiting service of the Marine Corps was combined into three recruiting divisions, with headquarters at

Philadelphia, Pa., Chicago, Ill., and San Francisco, Cal., respectively. A field officer was placed in charge of each recruiting division, and in his hands were concentrated the administrative and inspection duties for that particular section.

22. While the plan has not been in operation long enough to make a comprehensive report of its workings, it is apparently working satisfactorily and to the betterment of the service generally.

23. This office has been impressed of late with the importance of excluding from the service that class of defectives who are more or less feeble-minded. The educational test on examination for enlistment is necessarily elemental, but there are many young men who can read and write who are physically sound and yet whose mental growth has been prematurely arrested. This class of defectives is peculiarly attracted to military life, but when enlisted are notoriously nonamenable to discipline.

24. It is the intention of this office to collate data and statistics of these cases, with a view to cooperation with the Bureau of Medicine and Surgery and the civilian medical examiners appointed by the Marine Corps recruiting officers to eliminate as far as practicable this undesirable class.

RECRUIT DEPOTS.

25. During the last year the course of instruction at the recruit depots, navy yards, Philadelphia, Pa., and Norfolk, Va., has been carried out, except that when expeditions have been sent out it has been necessary to include all recruits who had been under instruction for six or more weeks.

26. During the fiscal year recruits have been under instruction as follows:

Mare Island	1, 016
Norfolk	1, 375
Philadelphia	749

27. With the exception of about four months, when the weather was too severe, the recruits from Philadelphia and Norfolk have fired the Army marksman course at the Marine Corps rifle range, Winthrop, Md.

28. Due to the fact that all available quarters at Philadelphia are required for the advance base regiment, and to the fact that experience has demonstrated that a single depot is more economical and efficient than two, on June 30 the recruit depot at Philadelphia was discontinued, and all recruits are now being sent to the depot at Norfolk, Va. At Norfolk all recruits are quartered in tents, and during the winter months this causes much discomfort and an increase in desertions. Classes in which men desiring it may receive instruction in arithmetic, grammar, spelling, geography, and United States history, are being arranged for, and as soon as possible it is intended that classes be started at other posts.

29. There are no suitable buildings in which indoor drills may be held in inclement weather, and the instruction has therefore been materially interfered with. Proper amusement rooms are not available, and it has been extremely difficult to provide suitable diversions for the large number of men new to the service, which must be assembled at the recruit depots. It has also been necessary for the

recruits to be thrown more or less into contact with the older men, and until their course of training is completed this is considered most undesirable, not only on account of the danger of spreading infectious diseases, to which the recruit is particularly liable, but also on account of the training of the recruit. The selection of a location for a recruit depot should be governed by climatic conditions, facilities for instruction, for which considerable land for drill purposes is needed, together with rifle range and facilities for instruction in boating, and expenses of transportation to and from the depot. On the supposition that certain land adjacent to the Marine Corps reservation at Norfolk would not be required for industrial purposes, this office made recommendation, in its last annual report, that this land be assigned to the Marine Corps for use by the recruit depot, but in view of the fact that this site is included in the latest plan for the industrial development of the yard, it will not be available for the Marine Corps. This office therefore recommends that sufficient land lying north of the Marine Corps reservation, Charleston, S. C., where the climate is such that outside instruction can be held at all seasons, be assigned to the Marine Corps for that purpose, and has included in its estimates a sum sufficient to erect the necessary buildings for the depot.

PHYSICAL TRAINING.

30. The Swedish system of physical training, as adopted for the naval service, has been in use at the recruit depots throughout the entire year with most satisfactory results, and at the beginning of the present fiscal year (1913-14) instructions were issued directing the extension of this system of physical training to all posts of the Marine Corps. Lack of suitable gymnasiums at the various posts is a serious matter, particularly at recruit depots, where it is necessary that the physical instruction be most thorough.

TARGET PRACTICE.

31. *Qualifications.*—The number of men in the Marine Corps who have qualified as marksmen or better has steadily increased, as shown by the following tables:

	October, 1910.	October, 1911.	October, 1912.	June 30, 1913.
Expert riflemen.....	309	435	446	543
Sharpshooters.....	878	1,665	2,067	2,533
Marksmen.....	723	784	634	733
All grades.....	1,910	2,884	3,147	3,809
Percent of total enlisted strength qualified in the various grades.	0.209	0.318	0.335	0.398

32. *Ranges.*—The same situation exists as in former years regarding ranges. The Army authorities, upon request, have courteously placed the Fort Barry range at the disposal of the Marine Corps during the month of October. Wakefield has been leased from the Bay State Military Rifle Association, and is now open for the commands at the barracks at Boston and Portsmouth, the prisons at those places, and the detachment aboard the *Southery*; also for

the detachments of such ships as may be in that vicinity and have an opportunity to fire. Capt. Thomas C. Turner is in command.

33. *Competitions.*—The Philippines Division competition was successfully held on March 10, 11, and 12, 1913. There were 61 entries, including 5 officers. The course for departmental competitions in the Army was fired, and first place was taken by Corpl. James E. Snow with the excellent score of 892. The usual medals were distributed, 5 officers being awarded bronze competition medals for their standing.

34. Because of the large number of men in Cuba in the early part of the year, and on account of the interest generally displayed in target practice, a division competition was authorized for the brigade stationed there. This was termed the "West Indies Division competition," and was held on March 27 and 28, 1913, at Camp Meyer, Deer Point, Guantanamo Bay, Cuba. Weather conditions were bad, but the first enlisted man attained a score of 852, which is very creditable. Four officers were awarded medals for their standing in this competition.

35. *Rifle-team squad.*—A rifle-team squad of approximately 40 men, under command of Capt. Douglas C. McDougal, was assembled at Wakefield, Mass., about May 26, 1913, for try out and instruction. Five officers were also among the candidates for the team. This squad participated in the matches of the New England State Rifle Association at Wakefield, and from the squad 26 men were selected to compete in the national matches at Camp Perry, Ohio.

36. The team selected from Camp Perry squad finished fourth in the national match, and in the national individual match Lieut. L. W. T. Waller finished second and Pvt. C. H. Martin finished seventh. The work of the squad in team and individual work was most creditable in all matches at Camp Perry. From Camp Perry the squad went to Sea Girt, and a team from the squad won first place in the following matches:

The McAlpin trophy match, and

The Spencer silhouette team match.

The following individual matches were won by members of the squad:

Sea Girt championship match (Corpl. F. Lueders).

The Swiss match (Corpl. E. J. Blade).

The Libby trophy match (Sergt. C. R. Nordstrom).

The Remington Arms, U. M. C. expert match (Corpl. R. B. Moore).

37. *Miscellaneous notes.*—On April 21, 1913, an international rifle competition was held at Peking, China, under the auspices of the Y. M. C. A., and was participated in by eight legation guards, as follows: Italy, Austria, Russia, Germany, United Kingdom, France, United States, and Holland. This match was won by the United States team, consisting of Sergt. Andrews, and Privts. Hendrickson, Williams, Rothwell, and Lapansky.

38. The open championship for North China was held at Tientsin, on May 10, 12, 1913. This rifle match was won for the third successive year by the marines. This year they took first, third, fourth, fifth, seventh, and eighth places, the Army taking second place. Sergt. John J. Andrews of the Marine Corps was high man. The Fifteenth United States Infantry had 30 entries, and the Marine Corps 18, out of a total of 94.

SERVICE AFLOAT.

39. So far as the demands made on the corps by expeditionary service would permit, the policy of sending officers and men to the Marine Barricks, Naval Academy, Annapolis, Md., for training preliminary to service afloat, has been followed.

40. As soon as officers are available this office recommends that no detachment have less than 27 men, and that an officer be assigned to each detachment.

41. It is recommended that officers while serving at sea, receive the increase of 10 per cent now authorized by law for officers of the Navy, and that, if practicable, this provision be extended to include men of the Marine Corps.

42. It is recommended that junior marine officers serving afloat be assigned duty as watch officers in addition to their duties in connection with the detachments.

EXPEDITIONARY FORCES.

43. An expeditionary force consisting of 13 officers and 341 enlisted men, under command of Maj. Smedley D. Butler, left Panama on the U. S. S. *Justin* August 10, 1912, and arrived at Corinto, Nicaragua, August 14, 1912.

44. A force of 29 officers and 752 enlisted men, under command of Col. Joseph H. Pendleton, sailed from Philadelphia, Pa., for Nicaragua on the U. S. S. *Prairie* August 24, 1912, arriving at Corinto on September 5, 1912. This force was augmented from time to time with detachments from the U. S. S. *California*, *Colorado*, *Cleveland*, *Denver*, and *Tacoma*, the whole force being under the command of Rear Admiral William H. H. Southerland, commander in chief Pacific Fleet.

45. The greater part of this force returned to Panama on November 21, 1912, and the remainder, except a guard for the American legation, Managua, on January 16, 1913, and from Panama was returned to original stations in the United States. Commendatory letters concerning the service rendered by this expeditionary force were received from the department, mentioning in particular Col. Joseph H. Pendleton, Lieut. Col. Charles G. Long, Maj. Smedley D. Butler, and Second Lieut. Earl C. Long.

46. A force of 27 officers and 755 enlisted men, under the command of Col. Franklin J. Moses, sailed from Philadelphia, Pa., on the U. S. S. *Prairie* September 27, 1912, for Santo Domingo. This force found no occasion to go ashore and remained aboard the *Prairie* until its return, December 1, 1912.

47. The Second Provisional Brigade, consisting of 72 officers and 2,097 enlisted men, sailed on the U. S. Army transport *Meade* from Philadelphia, Pa., February 20, 1913, and on the U. S. S. *Prairie* from Norfolk, February 19, 1913, for Guantanamo, Cuba, under command of Col. Lincoln Karmany. This brigade was composed of two regiments, the first under command of Col. George Barnett, and the second under command of Col. Joseph H. Pendleton. Several companies of this brigade returned to original stations May 2, 1913, and the remainder on June 1, 1913.

48. Attention is invited to the urgent necessity of providing by law for the administration of discipline in naval landing forces, and in Marine Corps forces when on expeditionary duty or on board a naval transport; appropriate recommendations have been submitted to the department.

ADVANCE BASE SCHOOL.

49. The course at the Advance Base School, Philadelphia, Pa., has been materially interfered with by the expeditions to Nicaragua, Santo Domingo, and Cuba, though actual service in the field has been of great value to the 3-inch landing gun battery and the signal company.

50. While the Second Provisional Brigade was in camp in Cuba a board was ordered to revise that part of the Landing Force and Small-Arm Instructions, United States Navy, dealing with field artillery, it being almost entirely inadequate and obsolete; the instructions formulated are now being tried out at those posts equipped with the 3-inch landing gun.

51. As soon as practicable after the return of this brigade, the school was reestablished, and the following organizations have been assembled there for advance base instructions:

- 1 5-inch battery,
- 1 3-inch battery,
- 1 3-inch landing gun battery,
- 1 mine company,
- 1 signal company,
- 1 engineer company—

a total of 26 officers and approximately 700 men.

52. Classes of men of the signal company are receiving instruction in elementary electricity, telegraphy, wireless telegraphy, and practical work as linemen. If the course of instruction is not interfered with by expeditionary service, these forces should be thoroughly prepared to efficiently carry out advance base exercises next winter in connection with the fleet.

53. After the exercises during the coming winter are completed, and as soon as officers and men are available, it is recommended that this regiment be completed, and that, as soon as practicable, a second fixed defense regiment be assembled. In connection with the second fixed defense regiment, the barracks at Mare Island are entirely inadequate for even the present garrison, and it is therefore recommended that a sum sufficient to start this project at least and relieve the present situation be included in the department's estimates to the Congress.

54. A large amount of ordnance and other stores is now being provided for use in connection with the advance base at Philadelphia, but adequate and proper storage facilities are lacking. In view of this, it is earnestly recommended that provision for a suitable storehouse be included in the estimates to be submitted to Congress.

55. Capt. Feland has continued his work in connection with the modification of the Navy mine, Mark I, and it is believed that he has evolved a system whereby that mine will be thoroughly satisfactory for advance base work.

AVIATION.

56. Two officers and seven men are now under instruction in aviation at the United States Naval Academy, Annapolis, Md. It is recommended that these officers and men, with the necessary equipment, be transferred to the Marine Barracks, navy yard, Philadelphia, Pa., for duty in connection with the fixed defense regiment at that post.

TRANSPORTS.

57. The provision for a new transport, which was included in the last appropriation bill, and the department's order to fit out the *Hancock* as a transport, will be of the utmost benefit to the Marine Corps. In view, however, of the length of time required for construction, it is recommended that one transport, similar to the one authorized during the last fiscal year, be included in the department's building program.

MARINE OFFICERS' SCHOOL.

58. The regular course of instruction at the school has been materially interfered with by the necessity of sending officers under instruction on expeditionary duty. The temporary quarters provided for student officers at Norfolk, while much better than tents, are not at all appropriate for the use to which put, and the entire lack of drill-hall, gymnasium facilities, proper class and lecture-rooms, is a serious handicap to the efficiency of the school. There have been included in the appropriation estimates covering the amount necessary to provide a suitable building for this purpose, and it is earnestly recommended that this matter receive the department's approval.

INSTRUCTION OF OFFICERS AT SERVICE SCHOOLS.

59. Due to the courtesy of the War Department it has been possible to continue the policy of sending yearly two officers to the Army War College and two to the Army School of the Line.

60. Three officers have been detailed for instruction at the Naval War College.

MATÉRIEL.

61. The aggregate amount of the maintenance appropriations, which are exclusive of public works, provided by the Congress for the Quartermaster's Department for the period covered by this report, is \$3,095,357, which includes an item of \$56,500 under the head of "Provisions" authorized in deficiency act approved March 4, 1913, the latter amount being required to meet extraordinary expenses under the head mentioned on account of the expeditionary forces on field duty in the Tropics.

UNIFORM REGULATIONS.

62. The new uniform regulations were approved by the Acting Secretary of the Navy and the Major General Commandant under date of November 29, 1912. The changes in the uniform and equip-

ment, which are to be made as soon as practicable and completed not later than January 1, 1914, will be accomplished, it is hoped, by the date set in the Regulations for the completion of the changes. Contracts have been made for the new winter field shade material and some deliveries have been made, but there has been more or less delay in such deliveries on account of the several contractors being unable to obtain a satisfactory shade that would stand the prescribed tests.

PUBLIC WORKS.

63. More or less extensive improvements and additions at many of the stations of the corps are considered necessary for the proper instruction and housing of the men. The lack of proper gymnasiums, drill-halls, and amusement and instruction rooms at practically all posts of the corps is a most serious handicap in that the training of the men is interfered with, and owing to the lack of adequate facilities for legitimate entertainment they are led to go outside for their amusements.

BOSTON, MASS.

64. In the naval appropriation act approved March 4, 1913, provision is made for a new marine barracks and for new officers' quarters at this station, for which buildings \$100,000 and \$48,000, respectively, were appropriated. Consequently no repairs or improvements have been made to the old buildings except those of a temporary nature absolutely necessary for the health and comfort of the command.

PHILADELPHIA, PA.

65. In the naval appropriation act approved August 22, 1912, \$175,000 was appropriated for "one additional fireproof barracks" at this place. Plans and specifications were prepared by the Bureau of Yards and Docks on suggestions furnished by this department. The contract for the building (Barracks No. 3) was awarded May 17, 1913, by the Navy Department to Thomas Reilly, 1616 Thompson Street, Philadelphia, Pa., at a cost of \$160,799. This building should be completed within 12 calendar months from date of contract. Steps are now being taken by the Bureau of Yards and Docks toward obtaining competition for the erection of the central heating plant and for the other items mentioned in the naval act of March 4, 1913, in which \$50,000 was appropriated for additional improvements at this post. The three sets of quarters constructed by Edward Fay & Son, under contract dated July 31, 1911, were completed during October, 1912.

DEPOT OF SUPPLIES, PHILADELPHIA, PA.

66. Attention is again invited to the highly desirable plan of making a further extension to the depot of supplies in Philadelphia. At various times the Congress has appropriated sums for this depot, including the purchase of land, until at the present time a very satisfactory manufacturing plant has been established in which nearly all of the clothing and equipment of the corps is manufactured, received, and distributed. The manufacturing has been so extended

as to, at the present time, include the making of haversacks, canteens, knapsacks, leggings, leather straps, and many other articles of equipment too numerous to mention, at a very material saving over the expense attending the purchase of those articles under former methods. It has also been demonstrated to be economical to make at this depot all of the clothing boxes, mess tables and benches, equipment for the bakeries, and various other carpenter work required at the various posts of the corps, but the present space is so cramped that this work can not be extended to its full limit. A great saving has also been effected by the manufacture of tentage required by the corps, in the same manner that the Army manufactures similar equipment at the Schuylkill Arsenal, in Philadelphia, but the present space is too small to admit of this work being carried on to the fullest extent. The officer in charge of the depot recently recommended that in the interest of economy a power plant should be installed, under which he estimates that a saving of from \$9,000 to \$11,000 would be effected, and it is also his recommendation to provide for railroad sidings to be run into this building, where he estimates there would be a further saving of \$800 to \$1,500 per annum in handling stores, to say nothing of the reduced prices which could be obtained in supplies purchased in carload lots. More space is needed in the present building to properly handle the stores and equipment returned from expeditionary forces, in order that necessary repairs to the same may be made and a reassembling effected. Owing to the limited space now provided it is necessary for efficiency to rent a storeroom in the vicinity of the present depot at an annual rental of \$2,233. This depot is being fully outfitted in the way of equipment, etc., for 3,000 men for field service.

PANAMA, I. C. Z.

67. In the naval appropriation act approved March 4, 1913, \$400,000 were appropriated for "Erection of barracks, quarters, and other buildings for accommodation of marines" on the Isthmus. Accordingly, a plot of land at Ancon was assigned as a site upon which to erect the new buildings. Permission was obtained from the Secretary of the Navy to proceed with the new construction work, which work is to be done by the Isthmian Canal Commission. Subsequently, however, the construction of the buildings was ordered to be held in abeyance until after the visit of the Secretary to the Isthmus. Only the most essential and urgent repairs have been made to the existing buildings, on which constant repairs are necessary, owing to severe climatic conditions there, in view of the early abandonment of that post. With the flooding of the canal the present site at Camp Elliott has become isolated and entirely unsuited for its present uses. The buildings are old and only such repairs have been made as were absolutely necessary for the health of the command.

MARE ISLAND, CAL.

68. This is the principal Marine Corps post on the Pacific coast, and if the present policy is carried out its importance will increase. The present barracks are old and insanitary and were damaged by the earthquake in 1906, and as the strength of the post, including the

recruit depot, is usually over 650 men, a large number are required to live in tents throughout the year—an unsatisfactory and expensive method of housing a command. The most pressing necessity, so far as public works, Marine Corps, in the United States are concerned, is considered to be the construction of adequate and proper buildings for this post.

PUGET SOUND, WASH.

69. By authority of act of Congress approved March 4, 1913, making appropriations for "One set bachelor quarters, for eight officers, \$35,000," this office prepared and submitted sketches of such building to the Bureau of Yards and Docks. The sum of \$7,000 was appropriated in act approved August 22, 1912, for the purchase of land on which to erect a rifle range, with buildings, etc., and steps are being taken to perfect the transfer of the land to the Government.

DEPOT OF SUPPLIES, SAN FRANCISCO, CAL.

70. The depot of supplies moved into the new building on August 28, 1912, which is a modern fireproof structure, affording more floor space than the building formerly occupied for this purpose. This depot is being fully outfitted in the way of equipment, etc., for 1,500 men for field service.

PEARL HARBOR, HAWAII.

71. The new barracks building and officers' quarters at this station will be completed and the buildings turned over by the contractor on or about September 17, 1913. By act approved March 4, 1913, \$63,000 additional have been appropriated for Marine Corps buildings at this station.

GUAM.

72. The accommodations at this post are barely sufficient for the present command, and if its strength is increased additional barracks and quarters will become a pressing necessity.

W. P. BIDDLE.

REPORT

OF THE

SECRETARY OF THE INTERIOR.

DECEMBER 10, 1913.

SIR: There are many matters of home concern as to which it is my pleasure to report to you, but I would give prominence to that which appeals to me as of largest and most immediate moment—the fuller and freer use of our national resources.

It is, of course, known to you that there exists a feeling in the West that its affairs and needs have not been given that consideration at the hands of the National Government which they merit. This feeling is not confined to speculators or exploiters. It is the sentiment of many who are without selfish motive and regard the matter wholly from the standpoint of national growth. They point to the conditions which obtain in Alaska as unparalleled among people of our aggressive and nation-building stock. So, too, they are unable to understand why ways have not been found by which the great bodies of coal and oil lands, of phosphate and potash lands, may be developed, and the waters of the mountains made available for the generation of power and the redemption of the desert.

There is one very simple explanation for the existence of this feeling. We have adventured upon a new policy of administering our affairs and have not developed adequate machinery. We have called a halt on methods of spoliation which existed, to the great benefit of many, but we have failed to substitute methods, sane, healthful, and progressive, by which the normal enterprise of an ambitious people can make full use of their own resources. We abruptly closed opportunities to the monopolist, but did not open them to the developer.

LAND POLICY.

I have said that we had put into force a new land policy, which caused dismay and discontent. Let me explain what I mean by this. It was, in fact, but a new application of an old policy. Congress has always been most generous as to the disposition of the national lands. One can not read our land laws without being struck with the fixed determination which they show that it was wisest to be quit of our lands as quickly as possible. It might almost be said that

the Government regarded its lands as a burden rather than an asset. We gave generously to our railroads and to the States. There was land for all, and it was the Government's glad function to distribute it and let those profit who could. There was no thought then of creating timber barons or cattle kings, or of coal monopoly. The sooner the land got into hands other than those of the Government the better. And this generous donor was not so petty as to discriminate between kinds of lands, the uses to which they could be put, or the purposes which those might have who got them. Land is land, save when it contains minerals; this was roughly the broad principle adopted. To classify was a task too difficult or not worth while. The lands would classify themselves when they arrived in individual ownership. And so the door was opened for monopoly and for fraud.

If the Government did not appreciate the invaluable nature of its assets there were men who did. Great fortunes were laid in the vast holdings of what had but a short time since been the property of the people. There was danger that the many still to pour into the West would by necessity become the servitors of a fortunate and early few. On this discovery our indifference at once took flight. And so out of the abuse of the Nation's generosity there came a reaction against a policy that was so liberal as to be dangerous.

The Nation wanted home makers, but found its lands drifting into the hands of corporations which were withdrawing them from the market, awaiting a time when lands would be more scarce; it gave opportunity for many competing coal operators and iron manufacturers, but found the sources of raw material centering into a few large holdings; it wished its lands to be cleared of forests to make way for farms, but it found hundreds of consecutive miles reserved from use by the fiat of those who appreciated their worth, and many more miles of watershed despoiled of its needed covering in places where homes were not possible.

A reaction was inevitable. If lands were to be withdrawn from public service, why might not the Government do the withdrawing itself? The old philosophy that "land is land" was evidently unfitted to a country where land is sometimes timber and sometimes coal; indeed, where land may mean water—water for tens of thousands of needy neighboring acres. For the lands of the West differ as men do, in character and condition and degree of usefulness. We had not recognized this fact when we said "land is land." Lands fitted for dry farming and lands that must forever lie unused without irrigation; lands that are worthless save for their timber; lands that are rich in grasses and lands that are poor in grasses; lands underlain with the nonprecious minerals essential to industry or agriculture; lands that are invaluable for reservoir or dam sites—these varieties may be multiplied, and each new variety emphasizes the fact that each

kind of land has its own future and affords its own opportunity for contributing to the Nation's wealth.

So there has slowly evolved in the public mind the conception of a new policy—that land should be used for that purpose to which it is best fitted, and it should be disposed of by the Government with respect to that use. To this policy I believe the West is now reconciled. The West no longer urges a return to the hazards of the "land is land" policy. *But it does ask action.* It is reconciled to the Government making all proper safeguards against monopoly and against the subversion of the spirit of all our land laws, which is in essence that all suitable lands shall go into homes, and all other lands shall be developed for that purpose which shall make them of greatest service. But it asks that the machinery be promptly established in the law by which the lands may be used. And this demand is reasonable. Already Congress has recognized in many ways the appropriateness of this policy, but it is for yourself and Congress to further extend this thought into our legislation.

Surely this is not a task that may be adventured upon with recklessness or without respect for the opinions of others. And the suggestions which shall be made by me are so made in the hope that they will form a basis upon which the constructive mind may work and bring forth a more perfect, a more efficient working plan.

AS TO ALASKA.

The largest body of unused and neglected land in the United States is Alaska. It is now nearly half a century since we purchased this territory, and it contains to-day less than 40,000 white inhabitants, less than 1,000 for each year it has been in our possession. The purchase was made as a means of protection against the possible aggression of a foreign nation and without the hope that it would be even self-supporting. In the intervening 46 years we have given it little more than the most casual concern, yet its mines, fisheries, and furs alone have added to our wealth the grand sum of \$500,000,000.

For almost a generation it was the rich harvest field of a single company. Individual fortunes have been made in that country larger than the price paid to Russia for the whole territory. How rich its waters are we know, because they have been proved; but how rich its lands are in gold and copper, coal and oil, iron and zinc, no one knows. The prospector has gone far enough, however, to tell us that no other section of our land to-day makes so rich a mineral promise. And in agriculture the Government itself has demonstrated that it will produce in abundance all that can be raised in the Scandinavian countries, the hardy cereals and vegetables,

the meats and the berries off which 9,000,000 people live in Norway, Sweden, and Finland. It has been estimated that there are 50,000,000 acres of this land that will make homes for a people as sturdy as those of New England. Whether this is so or not, it would appear that Alaska can be made self-sustaining agriculturally.

This vast and unsurpassed asset lies almost undeveloped. A territory one-fifth the size of the United States contains less than a thousand miles of anything that can be called a wagon road. It has a few inconsiderable stretches of railroad which terminate, with one exception, either in the wilderness or at a private industry. Only the richest of its mines can be worked, and one of its resources of greatest immediate value to the people—its coal lands—lies unworked.

The one constructive thing done by this Government on behalf of Alaska in nearly half a century was the importation of reindeer for the benefit of the Eskimo on the border of the Arctic Ocean. For the white man we have done nothing—so little, in fact, that to mention what we have done is matter for chagrin and humiliation. I have thought that perhaps the scandals that have developed in Alaska have been in some part the result of a feeling that it was a No-Man's Land, where the primal instincts and powers were the only law.

This unfortunate condition can not be explained on the ground of the inhospitality of the Alaskan climate. A careful study of isothermal lines shows that some of southeastern Alaska has a climate more temperate and more equable than that of this city, while much of the greater portion to the north has a kindlier climate than Stockholm or St. Petersburg. Moreover, our people are not stayed in their quest for homes or wealth by the rigors of a long winter. The spirit and purpose which brought them from Europe to Virginia and to Massachusetts take them to-day to Montana and Saskatchewan. The United States lately opened to entry a tract of land in Montana for which there were 46,000 applicants for registration, and only 7,000 of these could be given an opportunity to homestead. There is more railroad building 500 miles north of the Canadian border than there is for the same distance south of it.

Why has not this land been developed? The frank answer is that we did not realize until within a few years that it was worth developing. As soon as we discovered its value as a national asset we became alarmed and drew back, affrighted at the thought that we might lose it, or at least that it would become the property of those who would exploit it without respect to the public interest. Since then we have been waiting to make up our minds as to what wisely could be done. We have hesitated and halted out of the very keenness of our appreciation of what Alaska might become. It has rather been in com-

pliment to Alaska than in derogation of her value that we have done so little for her in late years. It was a new land, to be opened under new conditions. The mistakes made there and here we did not wish to repeat. But now after a long pause it would seem to be the sense of the people that we shall proceed at once and in a large way to deal with the problem of Alaskan development.

PROPOSED ADMINISTRATIVE BOARD.

We have withdrawn Alaska from the too aggressive and self-serving exploiter. What have we to substitute as a safer servant of public interest? To this question I have given much thought, and my conclusion is that if we are to bring Alaska into the early and full realization of her possibilities we must create a new piece of governmental machinery for the purpose. We should undertake the work in the spirit and after the method of a great corporation wishing to develop a large territory. In my judgment the way to deal with the problem of Alaskan resources is to establish a board of directors to have this work in charge. Into the hands of this board or commission I would give all the national assets in that territory, to be used primarily for her improvement—her lands, fisheries, Indians, Eskimos, seals, forests, mines, waterways, railroads—all that the Nation owns, cares for, controls, or regulates. Congress should determine in broad outline the policies which this board in a liberal discretion should elaborate and administer, much as is done as to the Philippines. This board would of course have nothing whatsoever to do with the internal affairs of the organized Territory of Alaska, for it would exercise no powers save such as Congress granted over the property of the United States in Alaska.

There are several reasons which appeal to me as supporting this suggestion:

1. Such a board could advise Congress as to what should be done, without prejudice, out of a deep national interest and with first-hand knowledge of conditions.

2. Such a board would coordinate the present enterprises of the Government in Alaska. As it is now, the control of lands is in one department, of forests in another, of roads in another, of fisheries in a fourth, of railroads in still another. The care of black bear is in one department and of brown bear in another.

3. There can be no satisfactory administration of land laws nor any other laws at a distance of 5,000 miles from the point of action. Much less is this possible where the two sections of the country are separated by an ocean, and the land calling for attention is closed to the world one-half of the year. The eye that sees the need should be near the voice that gives the order.

4. Alaska's opening and improvement should be treated as one problem. Each step in such an administration should be part of a plan, not an isolated act. We should have a unified and consecutive program, based on immediate knowledge governing this work. Each line of activity within the Territory should be correlated with all other activities. The opening of lands and the building of railroads or wagon roads, for instance, should be part of one scheme.

5. Alaska should be developed so far as possible out of her own revenues and resources. She should have a Federal budget of her own. Her revenues and expenditures should be presented to Congress on a single sheet. The funds raised from her lands and fisheries, her furs, her forests, and her mines should be used for the construction of her roads, railroads, telegraph and telephone lines, or for any other purpose which would make her resources more quickly available to the world. I believe it could be shown that Alaska is self-supporting to-day, or, what is more to the point, that by proper taxes and charges imposed upon those who are deriving large return from their enterprise in the Territory, such revenue could be derived as would support a large policy of expansion and improvement. In short, I would construct the administrative machinery that would most surely lead to a prompt and continuous development of Alaska as a part of the United States upon a plane commensurate with her possibilities industrially, agriculturally, and socially.

The members of such a board appointed by the President would be selected presumably with reference to their fitness for the work to be done. Each one could be made the administrative and residentiary head of a department or division, so that there might be a commissioner of the Alaskan land office, another commissioner of highways, another, perhaps, commissioner of Indian affairs and fisheries, and so on. All would sit together, as in the commission form of municipal government, and would work for a common end, the upbuilding of Alaska as an integral and contributing part of the Union.

I apprehend the fear that with such a commission there would be danger of corruption or indifference creeping into its work. This, however, is incident to the bestowal of all authority. The commission would not go unchecked, of course, for it must report to the head of some department at Washington, and through that head to Congress, and would be always subject to investigation. Moreover, no method has yet been invented by which dishonesty or poor judgment can be guarded against in public or in private life. In the end the character and wisdom of the men appointed is the only insurance that can be given against conduct that is foolish or worse.

Alaska should not, in my judgment, be regarded as a mere storehouse of resources upon which the people of the States may draw. She has the potentialities of a State. And whatever policy may be adopted should look toward an Alaska of homes, of industries, and of an extended commerce.

Strongly as I would urge this method of management—for it offers a rare opportunity to exhibit the efficiency of a Republic—I would not have Alaska wait for needed legislation until the merits of such a plan could be passed upon by Congress. Those things which appeal to me as of immediate necessity upon which independent action may be taken are (1) the construction of railroads in the Territory and (2) the opening of her coal lands.

ALASKAN RAILROADS.

I have already expressed to Congress my belief that it was wise for the Government itself to undertake the construction and operation of a system of trunk-line railroads in Alaska. And I am led to this view irrespective of the possibility of private enterprise undertaking such work, although my belief is that no railroads would be privately constructed in Alaska for many years to come excepting as adjuncts to some private enterprise. Be that as it may, it would seem wise for the Government to undertake this task upon grounds of state. The rates and the service of such railroads should be fixed with reference to Alaskan development—not with regard to immediate returns. The charges fixed should be lower for years to come than would justify private investment. I would build and operate these highways in the same spirit that the counties or the States build wagon roads—not for revenue, but for the general good. After all, a railroad is little more than an operated wagon road. In many countries they still call railroad cars “wagons.” Our laws as to railroads are evolved from our old laws as to carriage by wagon. Our courts speak of railroads as property charged with a public interest and so justify the regulation of their rates. But no court would justify the imposition of rates made for the purpose for which Alaskan rates should be made—the creation of a commonwealth. If this is our task, it should be done whole-heartedly and with a consciousness that the dollar spent to-day on an Alaskan railroad will yield no more immediate return on the investment than the dollar spent on the Panama Canal.

These, then, are the persuading reasons for the belief that the Government should undertake to drive from the coast inland one or more lines of railroad: (1) The Government already regards it as its duty to build wagon roads. Such roads when well built are almost as costly as the construction of a railroad, which is the essential modern means of transportation. (2) There can be no assurance that without

surrendering our resources in Alaska private railroads will be built. (3) The opening of this new country demands that the highways of travel and commerce should be made wholly subservient not to private interest but to the upbuilding of this territory, that they may be the real servants of the national purpose.

If it is thought wise to recoup the Government for its original outlay it can be done, at least in part, by following a plan not unknown to our people—by giving a land subsidy to the owners of the road. Retain in the Government one-half of the land on each side of the railroad until it had appreciated in value by the growth of the lands given to the public. Thus the Government would subsidize itself and reap some of the benefits accruing to its land from the construction of the road. Judging by the increase in land values in the newly opened sections of Canada, who could say but that long before the bonds were due the Government would thus have an asset sufficient to meet the original debt?

There seems to me no necessity for barring the way to minor privately owned roads because of the presence of longer systems of publicly owned roads. The two exist together in other countries. I would not even apply the principle of the commodities clause of the act to regulate commerce to such roads. They should be built, however, under governmental supervision, capitalized and operated under the strictest regulation, and be at any time subject to purchase by the Government at their cost, minus depreciation.

ALASKAN COAL.

It is not necessary to set forth here the extent or character of the coal fields of Alaska. Neither could I add to your knowledge or that of Congress as to the need for this coal both by the Navy and by the industries and the people of the Pacific coast generally. There are almost unlimited quantities of a high grade of lignite in the interior which may not stand extended storage or transportation. This could be converted into electricity at the mouth of the mines and widely distributed for lighting, heat, and power. Toward the southern coast of the peninsula there are two well-known fields of a high-grade bituminous coal and some anthracite. These are the fields which have given rise to the troubles with which all are familiar.

These coal fields should be opened not to speculators but to operators. Those should have these lands who will use them. None should be opened as a basis for a gamble in future values. If these premises express a sound public policy, there appears to me but one conclusion that can be reached as to the manner in which they may safely be turned over to the public—under a leasing and royalty system similar to that under which the State of Minnesota leases its ore lands and the States of Montana and Colorado their coal

lands. The tracts opened should be disposed of to those who within a certain time would develop mines and make their product commercially available. This means that where a railroad is necessary to the operation of a mine the applicant should take a lease so conditioned for a limited period. Sufficient land should be leased as a body to justify long-continued and economical operation. As the average of all operations in the United States is 2,600 acres, including many small holdings, this might be taken as a maximum unit.

There has been much dispute between those who favor making a lease for an indeterminate period, dependent alone upon continued operation, and those who believe it wisest to fix a term for the lease, 20, 30, or more years. This dispute seems to me of much more academic than practical interest. There should be no disposition to change the lessee. If a fixed term of lease is decided upon, the original lease should have an assured preferential right to a renewal until the mine is worked out. So that in the end the fixed term is a reservation of the right on the part of the Government to make new terms at the end of a number of years, a reservation which could be fixed in an indeterminate lease.

A fixed minimum annual royalty would conduce to operation and prevent the holding of lands out of use. These are matters, however, of regulation upon which much thought should be expended, and the experience of other lands will be found helpful. If the principle of the homestead law is adopted, and one lease only permitted to any one person or group of persons, and all leases made nontransferable, excepting with the consent of a designated authority, it would seem that monopoly could be prevented. I would, however, add one other precaution—that in each field a large body of the coal land be reserved, so that the public and the Navy might be rendered independent of private supplies if that should become necessary.

The attraction of a leasing system is that it enables an operator to put all of his capital into the promotion of his enterprise, no investment being needed for the purchase of the land. This makes it possible for the man of comparatively small means to become a coal mine operator. The lessee is pleased to pay the Government a royalty in lieu of tying up a large amount of capital in the land itself.

There is this further consideration, which those interested in Alaska's future might well consider. The royalties arising from these mines (as well as from oil) would for a long time be a source of revenue to the Government. To stimulate the opening of mines, all royalty might well be waived for a brief period; later, however, these royalties would be a not inconsiderable addition to the re-

sources available for Alaskan development, for I would think it the wisest policy to give to this new land the full return from her properties to be used in her improvement, at least for many years.

There are many isolated places in Alaska where small mines may be opened to supply a local and small need. A license to mine a small acreage without any charge whatever on the part of the Government would meet this need.

WESTERN COAL.

It might be well at this point to consider the coal land situation in the Western States. For the policy I have suggested as advisable to apply in Alaska I think the sensible policy to adopt throughout the rest of the country. We have tried two experiments in the United States as to coal lands. We allowed our coal lands to slip from us under the old land-is-land policy until we came into the presence of a coal monopoly or a series of such monopolies in various parts of the country. If this is questioned we may at least say, with exactness, that we realized that we had been putting priceless assets into the hands of a comparatively few far-sighted men for an inconsiderable consideration. Then we tried the other plan of appraising such properties on a scientific estimate of contents upon which the land is sold. This is the present plan, and it is really nothing more than a demand for a full but discounted royalty in advance. It has against it, in my opinion, at least two objections. Our coal land is not being used under this plan save under exceptional conditions of local and immediate demand, and the purchaser, when there is one, is speculating on the best guess that an honest geologist can make as to the amount of coal in the ground.¹

It is certainly not for the public interest that our coal deposits shall be opened rapidly and ruthlessly. We may reforest lands that have been devastated, or feed again into fruitfulness a soil that is starved, but we can not replace the carbon deposits underground once they are removed. I can not, however, feel that we should sacrifice any present need for fuel or willingly surrender ourselves to a demand for exorbitant prices because of a fear that some day the coal supply may be exhausted. Already there has been developed a substitute for coal in the flowing stream. The turbine converts

¹The outstanding withdrawals of public lands valuable for mineral fuels and fertilizers or in connection with the water resources of the public domain now aggregate 66,000,000 acres. The coal-land withdrawals awaiting classification constitute the larger part of this acreage, being 56,316,410 acres on Dec. 4, not including the blanket withdrawal of coal lands in Alaska. It is noteworthy that a larger area than this has been restored within the past 5 years, and nearly 20,000,000 acres have been classified as coal lands and are open to entry at appraised prices. The lands classified and restored by Executive order to appropriate entry since Mar. 4 last total 10,000,000 acres, every restoration being based upon careful consideration within this department. About 400,000 acres of mineral lands in the same 9 months have been withdrawn.

melted snow into heat and light, which can be distributed over a constantly widening area. I think we have now arrived at that point in scientific achievement which justifies the belief that the wheels of industry will not cease, nor our houses go unlighted or unheated, so long as dams may be built upon our streams. Water will be, indeed already is, the greatest conservator of coal. We must seek to make use of our coal, the fullest use that society requires. This principle seems a truism. But here lies the difficulty. We wish cheap coal and at the same time a minimum of waste. We wish society to take the lion's share of the profit and yield no more to the operator than will make his work sufficiently attractive to keep him at it. In short, we desire competition without waste, a frank impossibility.

Other countries have wrestled with this problem. Some have gone into Government operation. But those who are nearest to us in institutions and tendencies have found that in a new country where there must be large development and higher rewards for enterprise, the safest practicable method is to lease the land, the Government taking a modest royalty and retaining some measure of control over operation.

PETROLEUM, PHOSPHATE, AND POTASH.

The United States is beginning to appreciate the extent and value of its oil deposits, and for the disposition of these lands no better plan has been suggested than one analogous to that offered as to coal lands. I would call your attention to the absurdity of applying the placer mining law to the development of petroleum lands. This law, which was based upon the fundamentals of the miners' codes of early days, was passed without thought of the occurrence of other deposits than placer gold. However, the land department, and later, Congress, applied the law to oil lands. The placer law provides, in the main, that no location shall be made without a discovery of valuable minerals on the claim, that the boundaries of the location shall be plainly marked on the ground, that no claim for an individual shall exceed 20 acres or for an association 160 acres, that \$100 worth of assessment work must be done each year, and that upon the expenditure of \$500 in labor or improvements and upon compliance with certain minor requirements the claimant is entitled to a patent to his claim.

The claimant who has gone upon lands for the purpose of making mineral location, and is engaged in work looking to the discovery of minerals, is protected against adverse agricultural claimants on the ground that the land which he occupies is not vacant and open to settlement. The extent of his protection against adverse mineral claimants is, however, a matter of serious doubt. He can not be

ousted by the forcible or fraudulent entry of another mineral claimant, but if such adverse claimant enters peaceably, openly, and in good faith, prospects the claim and first discovers minerals, thus perfecting his location, his title is superior and he dispossesses the original occupant. On the other hand, in some of the fields large areas are held indefinitely by assessment work which makes little pretense of exploring the claims or developing them. Useless roads which make the claims no easier of access, drilling rigs incapable of reaching the oil sands, building-stone locations where no building stone is to be found, and locations on worthless deposits of gypsum are among the subterfuges adopted to hold possession of lands prospectively valuable for oil. Thus, where occupancy without discovery is respected, large areas are withheld from exploration and development, and where such occupancy is not respected, the oil prospector must assume undue risk of the loss of his investment prior to discovery.

An objection of equal force to the placer law as applied to petroleum arises from the fact that the mineral is fluid. It moves underground. A well on one tract is likely to draw from a neighboring tract. Thus it becomes necessary for each operator to drill wells along his boundary lines before his neighbors do so. Otherwise, they will draw off a part of his oil. He is therefore forced to drill whether it is otherwise to his advantage or not, in order to protect his oil deposits from exhaustion through adjacent wells.

We should, I believe, stimulate the search for oil and protect the prospector. The Government is withholding from entry certain considerable bodies of land in the belief that they contain oil, when this has not been demonstrated. It is our practice as soon as there has been a producing well discovered, and sometimes earlier, to withdraw all lands in the neighborhood which, in the opinion of experts, are of similar geological formation. The lands on which the discovery has been made or upon which exploration has been begun may or may not be included in the withdrawal. If they are, the law offers to protect the rights so acquired. I feel, however, that we are not sufficiently rewarding the pioneer. A plan could readily be evolved by which anyone wishing to prospect for oil on the public lands could obtain a license from the Government to exclusively prospect a large tract of land for a period of time—perhaps two years—and in the event that oil is found in commercial quantities the Government should be paid a royalty fixed in advance. This method is similar to that by which the Indian lands in Oklahoma have been developed and which has proved of the highest value in bringing capital into this work and insuring large returns to the Indians. In the Oklahoma case one great corporation, however, was given so large a body of land that after the original discovery it found it profitable to farm out its rights to subsidiary companies. This might easily be

prevented by regulations under which the Government would reserve to itself the adjoining lands. Indeed, I would not be adverse to granting such a license in unexplored country for, say, four sections of land, and in the event of discovery permitting patent to issue to the discoverer for a full section, the balance of the licensed land to remain in the Government to be leased in small parcels to other parties on a royalty basis under the more advantageous terms that could then be secured.

The United States will need oil for its Navy as well as coal, and probably in increasing quantities as the modern oil-burning or gas-burning engines are recognized. It would be economical to substitute oil for coal for many reasons; to reduce labor cost, to avoid the building and maintenance of colliers, and the purchase and support of coaling stations. The Diesel engine can, with the fuel carried from the home port, take one of our greatest ships around the world without dependence upon a renewed supply of fuel. England's adventure in this direction will presumably force other nations into like enterprise, and yet England has no oil fields on which to draw, while we have already the largest producing fuel oil fields in the world, and others are appearing. Already we know of oil in Alaska, and within a few weeks a fine grade of oil has been found on the Quinaielt Indian Reservation in Washington. The Indian oil lands we do not own. They belong to the Indians, and their product must be sold for the Indians' profit. The one sole reservation of oil lands for governmental use is that in California, over the withdrawal of which litigation is now pending. Under these conditions it would seem of the highest expediency that the Government make such offers as will induce the proving of our lands, and of these proved lands retain sufficient to make our ships independent of the world and as fully competent as their rivals.

Some years since this department announced the discovery within the United States of a deposit of potash which it was hoped would render our farmers independent, for a time at least, of all other sources. This deposit still lies unused. No proper laws have been passed by which it can be put into use. A common-sense view of the matter would be to treat these lands as it has been suggested we should treat coal lands.

So, too, should our vast deposits of phosphate rock be brought into the world's supply. We are giving a constantly increasing volume of thought to the scientific methods by which the fertility of our soils may be increased. And the time is likely to come when the deposited phosphorus in our western lands will be regarded as of almost priceless worth. Few appreciate how very extensive these deposits are. They run for hundreds of miles through Wyoming, Utah, Montana, and Idaho, and in other States similar deposits of

lesser extent are known to exist. We have millions of acres of phosphate lands which are estimated to contain several billion tons of phosphate rock; undoubtedly the world's largest known reserve. In 1910 the United States produced 52 per cent of the world's output of phosphate rock, and last year over 40 per cent of our product was exported. It would certainly be well if we could insure the preferential use of this fertilizer on American farms and export it in the form of farm products rather than as raw material.

TIMBER LANDS.

I am not satisfied with the operation of the homestead law as to the timber lands of the far western lands. As the law now is, a man may enter upon 160 acres of these lands, and by living a total of 21 months on the land during three years and cultivating at a maximum 20 acres of the land, it becomes his. He promptly proceeds, if he is wise, to sell it to some lumber company for from \$10,000 to \$20,000. The land is allowed to lie for an indefinite period as a part of the company's forest reserve or is logged off, leaving the stumps in the land, and eventually sold for agricultural purposes, if so adapted.

Experience justifies the statement that few men take up these heavily timbered lands under a bona fide attempt to meet the purpose of the law, which, as its name implies, is to convert the public land into homes. By the investment of a few months' time and a few hundred dollars the homesteader gains a property worth many thousands of dollars. Yet all the conditions of the law are complied with and patent must issue. The Government loses the timber and the land and does not gain a real home maker. Such homesteaders add nothing to the wealth of the Nation. The law should punish them, in fact, as frauds. Whether with the connivance of the lumber companies or not, they are the agencies by which the law is defeated and the lands conveyed where it is not intended that they should go.

There is a remedy for this condition of things, and it lies in the selling of the land and the timber separately. I am beginning to doubt the wisdom of applying the homestead law to any land which has not first been declared fitted for agriculture. It is now a blanket law which is used to cover a multitude of frauds. Such legislation would also cure the abuses resulting from the use of certain classes of scrip.

ARID LANDS.

"The Great American Desert," as it was designated upon the map some 40 years ago, has become one of the richest portions of our country. This desert included a variable area, generally all west of the Missouri River to the Sierra Nevada. To-day it is harvest field, cattle range, mining camp, and orchard—where there is

water. And where there is no water it remains desert. There are at least four States which can never increase greatly in stable population unless their lands are brought under irrigation. And in all of the Western States there are tens of thousands and in some millions of acres that will remain waste land, fit only for the poorest cattle range, and much not even for that use, without the expenditure of large sums for reservoirs, dams, canals, and ditches. That there is not water enough even with the fullest storage to supply the demands of all the arable land can safely be said. That, however, there is sufficient to care for a large part of this territory and bring it into fruitfulness there is no doubt. The Government, seeing this condition, undertook to lend itself to the development of these lands by what is known as the Carey Act. This was a form of cooperative effort in which the Federal Government turned over any required body of lands to a State, which the latter undertook through private enterprise to irrigate. When to irrigate meant nothing more than to divert a portion of a stream from its bed and convey it by gravity to the desert, this plan was attractive. But since these simpler methods had to be abandoned as no longer adequate, this act has done little in the promotion of such enterprise. The successful Carey Act projects are a distinguished few. Great wrongs to trustful or none-too-wise farmers were done in its name, and the suffering which it caused has made it difficult to make it serviceable, even under the more careful scrutiny of later and more cautious officials.

Because of the magnitude of the money investment required, and appreciative of the need, Congress in 1902 adopted the policy of undertaking irrigation projects of its own. The moneys received from the sale of public lands—less 5 per cent—went into a reclamation fund, administered by this department. The result has been the construction of some 25 projects, scattered through all of the arid-land States. In these the Government has invested approximately \$76,000,000. One of these, a pumping plant in Kansas, is now unused; another, a flood storage system in New Mexico, is only in partial use; both of these, however, represent less than 1 per cent of the total investment. The others are in operation, and less than 3 per cent of all the land which is served or which we are ready to serve is unoccupied. This work has been a success.

Soon after taking office I received a number of letters complaining of the Reclamation Service. To inquire into these complaints I first called a conference in this city of representatives from all the projects and later visited most of those from which most serious complaint had been received. I can not here review the matters considered or the information gained. My conclusion was that mistakes had been made by the service, some of which grew out of ambiguities or defects in the law, some out of inexperience, and

others out of a misconception of the relationship that should exist between such a governmental service and those with whom it was dealing. A larger degree of frankness with the farmer on our part and a fuller appreciation of the responsibilities assumed on the part of the farmer will mend much of the feeling that I found. But there is one matter of great moment to these people which should be corrected by law as soon as possible. We mistook the ability of the farmer to pay for his water rights. Ten years was the time given. His optimism and our own was too great. That time should be doubled. This should be done not alone because of the inability of many to meet their obligations to the Government, but because it will prove wise policy to give a free period within which the farmers may more fully use their farms. They can put their lands to a more profitable use, both to themselves and to the country, by being allowed to cumulate their earnings in the early years and be thus enabled to make investments in stock and machinery which will make for larger profits later.

I feel the keenest sympathy with those upon these projects who are entering into this work of putting the desert into public service. They are genuine pioneers in a new field of work, on the success of which depends greatly the rescuing of a vast territory. The enemy of the Government and of the farmer is the land speculator. He is of two kinds. Sometimes he is a farmer who does not expect to farm but to sell out at a higher price and go elsewhere. Generally, however, he is the holder of a large tract of private land within the project, who creates false values and burdens those who buy and attempt to farm with a load of debt which handicaps them in their efforts. Both of these are hostile to the welfare of the enterprise and tend to destroy the value of the service which the Government is attempting. But such matters may, I trust, be overcome by new methods of administration.

It is my hope that the Government will find its way to enter with zest upon more works of a similar character. Not to do this will leave undeveloped much of the most fertile land of the West. What is to be the future of Arizona and of New Mexico, of Nevada and Utah, of southern Idaho, central Oregon, eastern Washington, much of Montana and Colorado, and more of Wyoming and Nebraska, if the Government does not aid in their development? Private capital will not, for many years at least, risk undertakings of such magnitude as these States require. Experience has made the irrigation bond buyer extremely wary. Within a few weeks the most promising of the great private enterprises in Idaho has met with the misfortune which had befallen so many others in neighboring States. The most successful irrigation plants are founded on the wrecks of their pioneer

exploiters. The Government has rescued others. It has been with these projects much as it has been with our western railroads. They had to descend into the hands of the receiver before they could be resurrected into a new and glorified life.

USE FOR ROYALTIES.

But where are the funds to come from to carry on such work? My answer is, From the public lands in these States. We sell these lands now and the proceeds go into the reclamation fund. This is the policy of Congress—that we shall for a time use the moneys which the Government derives from the sale of its lands to create new values within the States. Two years ago the Government went further and set aside \$20,000,000, to be used in the completion of the irrigation schemes now under way. This is an advance by the Government for which it takes what might be termed a mortgage on the moneys which the projects will yield from the sale of water rights. Why not extend this policy?

The West can use profitably and wisely \$100,000,000 in the next 10 years to the advantage of the whole country. Indeed, without this expenditure the asset which the Government has in its desert lands will lie unused and be of no national value. The Government will recover all of the money it advances, not to speak of the homes and the values created by its enterprise.

If the Government will place upon a leasing basis these western resources with which we have been dealing, it can have an increased fund for the continuance of this work and an increased assurance of the return of its advances. Just as I would aim to make Alaska pay in the end out of her own resources for a liberal advance made to her for the opening and improvement of her territory, so should we aim to make these lands of the West bring into being the latent values of the West. With a little foresight we can transform coal and oil, phosphate and timber, into green fields and electric power. Railroads and power plants, street railways and waterworks, are built with 50-year bonds, which rest upon the foundation of their probable earnings. It is not without precedent in principle or in fact for the United States to improve its own property and for its advances take a mortgage upon the wealth it creates, and in one-half of 50 years we would regain our capital.

Inasmuch as the title to these oil and other lands would remain in the Government and be excluded from State taxation, it would seem to be fair that a certain percentage of the royalties received should go to the States within which the revenues are raised. Twenty-five per cent might be a minimum, but a higher percentage would seem advisable if the whole might remain for a time in the Government's

hands to be used in such cooperative irrigation enterprises as the State might desire, and after such use has been made and the fund replenished, be fully released to the State.

COOPERATION WITH STATES.

This suggestion of cooperation with the States is not made idly. I look forward with confidence to a more intimate relationship between the States and the Federal Government in undertaking this work of developing the West. The mass of the people are sympathetic with the purposes of the Government. They regard with pride the great engineering works of this service which stand as monuments to the interest of the Nation in their welfare. So cordial, indeed, is the spirit of the West toward this work that within a few months the State government of Oregon and the Federal Government, through the Reclamation Service, have become partners in several projected irrigation plans, one involving no less than the pumping of water from the Columbia River by electric power generated by the river itself. A similar cooperative enterprise has been entered upon with the State of Washington. The plan is that we shall do the work, supplying one-half the funds and the State one-half. This is a tendency which it is well to foster. For the State will well appreciate the effort of the Nation when it makes like sacrifice itself. And nothing could more induce to the success of the Nation's effort than to have some local check and interest. To place at a State's service a large sum gathered from the resources of the public lands within her borders would enable this character of mutual effort to expand. This can be done if we will retain for national improvement a portion of the national resources. And this may be done, I believe, with the hearty good will of the people who are chiefly concerned—the people of the West.

One reason stands out demanding the promptest possible action in this matter. Reservoir sites are few and becoming fewer each succeeding year. Those that may be had are rising steadily in value. So valuable, indeed, have some sites become since the institution of the Reclamation Service that projected enterprises are not now regarded as feasible, for the dependent lands which it was intended to irrigate can not make a return sufficient to pay the increased cost. And let this not be forgotten, that stored water means more than fields of alfalfa, generous orchards, and the homes of hearty husbandmen; it means power for industries, light and heat for town and farm. These two—irrigation and hydroelectric power—are companions. One does not think of the one without suggesting the other. And the magic worked by each is rivaled by its mate. Electricity is coal and kerosene which need no railroad to transport them. The significance of these irrigation reservoirs from this point of view

is but beginning to be appreciated and will grow greater as the country becomes more thickly populated and factories come to supplement the farms.

POWER SITES.

And this brings me to the consideration of the Government's policy toward the use of the public lands for reservoir and dam sites. It is one of the most perplexing problems that engages the mind of the man who wishes to see the West thrive more abundantly. What is such land worth? Are we justified in measuring its value by the use to which it is put, or should we yield this strategic resource without compensation? The country has been aroused too late to save the very richest of these points of vantage. Private power companies hold the most accessible of these sites under rights of which they can never be deprived. So much more compelling the reason why we should not yield what remain unwisely. The temptation to grant generously without condition that which may be put to so beneficent a use must be resisted if we are not to meet a spendthrift's fate. At the same time there must surely be a rational way by which capital may be brought into this public service. The present condition of stagnation does no one good. Within a generation I believe the people will be as alive to the value of public ownership of hydro-electric power plants as they are to-day to municipally-owned waterworks. The people not being prepared, however, to proceed to put these lands to their highest use, I am not in favor of keeping them from being utilized by private capital in the public interest. Because we do not know what is best to be done is not a reason either for doing nothing or for getting rid of the trouble as soon as possible, on the old "land-is-land" policy.

How may the needed advantage be gained for the present and the needs of the future be cared for? This is the immediate problem. What may capital reasonably demand? A fair and attractive return upon its investment yearly and the full return of its capital. And what may the public served reasonably require? Good service and fair rates. Who shall make these rates? Within the State they must be subject to State regulation; between the States, Federal authority must control. What return shall the Federal Government have for its lands? My answer would be, no return whatsoever, provided the plant reverted to the Government without cost at the end of 50 or 60 years, or so much of the plant as was based on the land itself and the improvements directly attached thereto, such as reservoirs, dams, water rights, and rights of way. For the tangible property of the plant, such as the distributing system and machinery, the Government might well agree to pay an appraised price so as to insure its being maintained and extended during the later years of the life of the franchise. The right to buy the complete plant at an ap-

praised figure at any time after 20 years would be a further protection and one not burdensome, while for better service it would seem advisable that all plants be permitted, in fact encouraged, to physically combine, just as our railroads are required to couple themselves into through routes and thus make their service continuous and interdependent; but they should not be allowed either to agree as to rates or to merge their capitalization or their identity.

Such plan as is here suggested should be attractive to capital wherever there is bona fide need for such water-power development, for it is definite in its terms and can be made a precise basis for capitalization. The term of the franchise would be long enough to permit of the amortization of the plant upon such a percentage as would lay no heavy burden upon each year's earnings.

Where a reservoir site is also used for the storage of irrigation waters, the right to which attaches to certain lands which should enjoy that use forever, it could be provided that at the end of the franchise period the Government would either turn over the plant to the water users or the State or otherwise provide for its operation.

IN CONCLUSION.

I have endeavored herein barely to outline such a constructive program as would meet any reasonable demand and with the least burden place our resources at the service of the people. It should not be impossible to hearten the hopes of those who live in Alaska or the many who would engage in her development were the doors of opportunity open to them. And if we can follow some such plan as has been suggested, by which, sensibly and conservatively, the resources of the West may be utilized for her upbuilding and improvement by the fullest recognition of their interdependence, I believe that we would meet the demands of all whose ambition to gain fortune has not closed their eyes to the general good.

This department has to do not alone with general policies but with an infinitude of administrative detail. Its embarrassments arise out of the large number of matters as to which administrative discretion may be exercised. I have not sought to present these at this time. That you may, however, appreciate the scope of this department's activities and read perhaps with greater interest the accompanying outline of the work done by our various bureaus, permit me to note here that we care for the Eskimo in Alaska and for the insane in the District of Columbia; for 324,000 Indians scattered throughout the continent, for whom we hold property in trust approximating in value \$1,000,000,000; that the choice beauty spots of our country have been set aside as national parks which are in our care; that we distribute to over 800,000 pensioners, their widows and dependents, a round sum of over \$165,000,000 a year; that we issue to

inventors of the United States and foreign countries an average of more than 3,000 patents each month; that every miner in the land is interested in those means which we are taking to prevent mine accidents and to more fully realize the mineral wealth of the land; that the schools of the Indians and the national university of the colored people are under our jurisdiction, together with the Hot Springs of Arkansas and the cliff dwellings of Colorado; that the internal economy of the Territory of Hawaii, as well as that of Alaska, fall within the purview of this department; that it is our part to measure the waters of a thousand streams, survey the lands of all the States, and look beneath the surface to see what they contain; that we have still in our care a great body of public land (some 300,000,000 acres outside of Alaska), out of which each year approximately 60,000 farms are carved; that we have a bureau of education, which should be provided with the equipment by which it may adequately do a great work for the schools, the teachers, and the children of this country, or be abolished.

Respectfully, yours,

FRANKLIN K. LANE,

Secretary of the Interior.

The PRESIDENT.

ABSTRACTS OF REPORTS OF BUREAUS AND OTHER ADMINISTRATIVE UNITS OF THE DEPARTMENT.

OFFICE OF THE ASSISTANT ATTORNEY GENERAL.

The following table shows the receipt and disposal of matters that are docketed or recorded, but does not account for numerous matters of which no formal record is made:

Work of office of Assistant Attorney General.

	Public lands.		Pensions.		Indian.
	Appeals.	On re-hearing.	Appeals.	On re-hearing.	
Pending Oct. 1, 1912.....	2,157	73	802	4	4
Received to Oct. 1, 1913.....	3,060	664	2,598	62	24,396
Total.....	5,217	737	3,400	66	24,400
Disposed of Oct. 1, 1912, to Oct. 1, 1913.....	3,073	614	2,595	63	24,399
Pending Oct. 1, 1913.....	2,144	123	805	3	1

	General opinions.	Disbarment.	Miscellaneous.	Total.
Pending Oct. 1, 1912.....	10	7	251	3,308
Received to Oct. 1, 1913.....	136	13	17,941	48,870
Total.....	146	20	18,192	52,178
Disposed of Oct. 1, 1912, to Oct. 1, 1913.....	140	19	17,970	48,873
Pending Oct. 1, 1913.....	6	1	222	3,305

Attention was called in last year's report to the rapid and enormous increase of work in this office, and figures were submitted showing the cases received and docketed since 1909—4,755 in the year ended October 1, 1909; 13,301 in 1910; 16,609 in 1911; 34,783 in 1912; and this year, 48,870—an increase of over 1,000 per cent in five years. In spite of this and the insufficiency in number of attorneys to cope with it, there has been no increase in the average of cases pending at the close of the year—3,305, as compared with 3,308 in 1912. Yet in land appeals, where delay is prejudicial to the interests of entrymen or claimants of the benefits of the general-land law, the arrears, including motions for rehearing, have increased from 2,230 to 2,267. This is not large; on the contrary, it is surprisingly small. It demonstrates, however, that the need of a greater number of qualified assistant attorneys, to which the attention of Congress has been repeatedly invited, is not transitory, occasioned by temporary conditions.

In a note in connection with the estimates for the ensuing year, the necessary legislation to remedy this condition is suggested.

The adjudication of appeals and the consideration of legal questions constantly arising in administration are not the only charges upon the time and industry of this office. Litigation in the courts of the District involves the department in many suits at law and in equity which must be defended by the Assistant Attorney General. During the last year 19 such causes have been tried and decisions rendered—4 in the Supreme Court of the United States, 8 in the Court of Appeals, and 7 in the Supreme Court of the District. This does not include interlocutory orders. The department was successful in all save one, which is now pending in the Court of Appeals from the adverse decision of a Justice of the Supreme Court of the District of Columbia. There are now pending 27 cases—3 in the Supreme Court of the United States, 4 in the Court of Appeals, and 20 in the Supreme Court of the District.

Elsewhere, in connection with appeals in pension and bounty land matters, the reestablishment is recommended of the Board of Pension Appeals to relieve the Assistant Attorney General's office of responsibility in connection with that class of appeals.

GENERAL LAND OFFICE.

In the year that has passed the operation of the so-called three-year homestead law has had a marked effect upon the output of the office, owing to the premature submission of final proofs in a large number of cases. This placed upon the office the duty of considering an unusual number of proofs that did not furnish a proper basis for a patent, so while the work of the office was much heavier on account of this act, there was not the equivalent showing of results that might have been expected.

The number of patents written during the last year was 63,496, as against 67,475 for the year previous, but when the conditions under which this result was secured are compared with those of the former year it is apparent that there was no want of industry in the office.

Area entered and patented.—The total area of public and Indian lands originally entered and allowed during the fiscal year ended June 30, 1913, is 15,867,222.45 acres, an increase of 1,292,533.63 acres, as compared with the area entered during the year 1912. The area patented during the fiscal year is 12,678,076 acres, an increase of 2,542,601 acres, as compared with the fiscal year of 1912; of the above area 7,320,058 acres were patented under the homestead law.

Receipts and expenditures.—The total cash receipts from the sales of public lands, including fees and commissions on both original and final entries, for the fiscal year 1913 were \$4,287,540.67. Miscellaneous receipts were as follows: From sales of Indian lands, \$2,118,469.34; reclamation water-right charges, \$274,172.57; depredations on public lands, sales of Government property, and copies of records and plats, etc., \$275,322.23; making the aggregate of cash receipts of this bureau during the fiscal year 1913, \$6,955,504.81, a decrease of \$3,017,543.19, as compared with those for the fiscal year ended June 30, 1912.

The decrease in receipts and increase in the area disposed of is caused by the decreased number of homestead entries commuted to cash and the increased number on which proof was made under the three-year act of June 6, 1912. The difference of nearly 2,000,000 acres on which commissions only were received instead of the Government price of \$1.25 and \$2.50 per acre would account for the decrease in receipts, and also the fact that the land service no longer collects reclamation water-right charges, these moneys now being collected by the Reclamation Service under the act of August 9, 1912 (37 Stat., 265).

The total expenses of district land offices for salaries and commissions of registers and receivers and incidental expenses during the fiscal year ended June 30, 1913, were \$890,474.06, an increase of \$40,353.02. The aggregate expenditures and estimated liabilities of the public-land service, including expenses of district land offices and surveys, were \$3,316,362.30, leaving a net surplus of \$3,639,142.51.

Field service.—The field service has been somewhat handicapped in the prosecution of its work by reason of the reduction by \$150,000 of the appropriation allowed for its maintenance, necessitating a considerable reduction in the force. Nevertheless, the high standard of efficiency heretofore set has been maintained and, while the number of cases investigated and closed during the fiscal year is not as large as during the previous year, yet, when the reduction of the force is taken into consideration, the results accomplished make an excellent showing.

Some progress has been made in the investigation of oil lands in California, and, as a result of the investigations made by the field force, a number of suits have been instituted during the year by the Department of Justice to recover lands patented as agricultural which, in fact, are oil in character. The necessity for increase in the force assigned to this work has been recognized, but it has been impossible to meet the demand by reason of the limited appropriation.

During this fiscal year field investigation has been completed in connection with the 1,129 Alaska coal claims. The past year proceedings were directed against 99 of the Alaska coal claims, which brings the total up to 399 on which hearings have been ordered. The testimony has been taken in a number of cases and the records are now before the Commissioner of the General Land Office for consideration, and hearings are being held and will be completed in a large number of these cases within a few months. There have been 765 Alaska coal claims canceled or held for cancellation.

The work of the investigation of private irrigation companies proposing to furnish water for the irrigation of lands within desert entries is largely increasing and is very important, since the adjudication of the desert-land entries is dependent upon the findings of the department as to the resources and reliability of the company and the feasibility of the proposed irrigation system. Not only is this work valuable in the adjudication of the cases but it also protects the entryman who contemplates the purchase of stock in any such company, since if the investigation discloses that the project is not feasible and the company not bona fide, the entryman is in many instances saved a loss which would accrue by an unwise investment.

An additional and new line of work has been placed upon the field service by the act of March 4, 1913 (Public, No. 450), which provides for the sale of fire-killed or damaged timber on the public domain outside of national forests, including unperfected claims. Instructions for the administration of this act are now under consideration and provide that the field service shall undertake designation, appraisal, and other work incident to the sale of such timber, and this must be met by the appropriation for the field service, since there is no other appropriation available. It is too early to estimate the additional work which will devolve upon the force by reason of the administration of this law, but it is believed that it will amount to a considerable item of expense, for which there will be no reimbursement, for the act provides that the proceeds of the sales shall go into the general fund derived from the sale of public lands, which is turned over to the Reclamation Service.

Public surveys.—Further experience with the direct system of surveys now in operation demonstrates the wisdom of its adoption. Increased efforts were made at the opening of the 1913 season to secure

the execution of all surveys authorized, and at the end of the last fiscal year 154 parties were at work on the various kinds of surveys, under the jurisdiction of the General Land Office.

The plan of procedure provided for the surveys of homesteads within national forests has been adopted by the forester, and the instructions printed in pamphlet form for the guidance of the surveyors. These irregular tracts listed by the forest officers will be surveyed by metes and bounds, whether on unsurveyed or surveyed lands, under the supervision of the Surveyor General, and the expense of the field and office work of the segregation will be hereafter borne by the Government instead of by the entrymen.

There is an increase of 900,000 acres in the total of new surveys over that of last year, which, added to the area of lands resurveyed during the year, shows an output of 10,250,000 acres, an excess over 1912 of about 2,500,000 acres of accepted surveys. If the production is counted by the surveying season instead of by the fiscal year the increased activity in surveying operations during 1913 will, it is estimated, result in an aggregate of 15,000,000 acres, which may safely be predicted a record for recent years and a high-water mark for surveys under the direct system.

Desert-land entries.—During the past year 2,328 desert-land entries were approved for patent, a slight increase over the preceding year. The gradual absorption of the water supply from the smaller streams by individual entrymen has resulted in the organization of water companies to furnish water from distant sources. Companies of this character are carefully scrutinized to determine their resources, liability, and control of water rights.

Indian allotments.—During the year ended 5,243 Indian allotments were disposed of by approval, an increase of 3,069 over the preceding year. These were chiefly tribal allotments, though included in the number were a few fourth-sectional allotments on the public domain, and approximately 400 Turtle Mountain selections under the act of April 21, 1904.

Ceded Chippewa pine logging.—The tenth year of Chippewa logging, Minnesota, closed on June 30. During said year there were cut 89,616,153 feet of timber, valued at \$771,689.81, which was less than that of the preceding year. The total amount of timber cut during the 10 years since the logging operations began is 1,094,075,158 feet, and the total amount received for the timber has been \$7,538,756.67. The amount of timber cut and paid for already exceeds, by over 188,000,000 feet, the original Government estimates, and several of the contracts have not been completed.

State selections.—There was a notable increase in the acreage of State selections approved during the year ended; selections were approved under the various State grants to the amount of 598,657.71

acres. This is an increase of 417,377.12 acres over the approvals for the preceding years. The States of Arizona and New Mexico during the past year entered actively upon the selection of lands granted them in the enabling act of June 20, 1910 (36 Stat., 557), upward of 1,400,000 acres having been selected during the year.

National forests.—Since the issuance of the last annual report 12 national forests have been enlarged and 27 reduced, under the act of June 4, 1907 (30 Stat., 36). There are now 163 national forests embracing 186,616,648 acres. The decrease in area of national forests since the beginning of the fiscal year is 789,728 acres.

Homestead entries in forest reserves.—During the last year approximately 365,000 acres of agricultural lands in national forests were opened to settlement and entry under the homestead laws, under the provisions of the act of June 11, 1906 (34 Stat., 233). Recent legislation provides for the survey by the Forest Service of metes and bounds claims under the act of 1906, without expense to the entrymen for the field work.

Railroad land grants.—Owing to the many withdrawals of land for coal classification, and also with a view to their value for power-site and reservoir purposes, much additional labor has been necessary in the preparation of clear lists of railroad lands for patent. The area patented to railroads during the year amounts to 1,335,174.18 acres.

Power-site reserves.—Under the provisions of the act of June 25, 1910 (36 Stat., 847), and the amendatory act of August 24, 1912 (37 Stat., 497), there were during the year 89 withdrawals for power-site purposes, embracing 152,686 acres, and 68,034 acres, theretofore withdrawn, were restored. There were three withdrawals as public water reserves covering 4,360 acres, and one reservoir site was created embracing 4,454 acres. On June 30, 1912, there were withdrawn as power site, etc., 2,231,156.75 acres. During the fiscal year ended June 30, 1913, there were withdrawn 161,670 acres, and 74,299 acres restored, leaving under reservation June 30, 2,233,360.48 acres.

Carey Act.—During the past fiscal year applications were received for the withdrawal of 198,403.99 acres, as against 1,416,974.04 acres during the previous year, showing a substantial decrease in applications for withdrawal. Especial attention is called to the large increase of approvals this year over last; in 1912, 97,917.01 acres were approved, while in 1913, 395,160.74 acres were approved. The patents issued during the past year total 35,170.62 acres. The operations of the past year under this act have been very encouraging; there is a manifest tendency among the States which enjoy the benefits of this act to cooperate, and thus secure a general uniformity of action.

Recommendations for legislation.—The Commissioner submits a number of recommendations for legislation, deemed by him to be of importance, summarized as follows:

1. Modification of the present form of appropriations for public surveys.

2. A consolidated right-of-way act, to include all classes of rights relative to irrigation, generation of electric power, telephone and telegraph, municipal and other public purposes, tramways, etc.

3. That a forfeiture act be passed applicable to approvals under the right-of-way acts of March 3, 1891, and February 1, 1905.

4. An amendment of the act of June 22, 1874 (18 Stat., 194), by which its protection will be extended to include desert-land entry-men as well as homesteaders.

5. That a consolidated Carey Act should be considered by which the several acts and amendments may be brought together.

6. Amendatory legislation with respect to the Territory of Alaska:

(a) The enlargement of certain privileges and modifications of the homestead law.

(b) Amendment of legislation regulating 60-foot roadway along the shores of navigable waters.

(c) Provision for the utilization of mineral or medicinal springs.

7. That the offices of register and receiver be abolished and in lieu thereof one officer be provided to perform the duties of both.

8. The passage of an act authorizing the submission of final proofs before a special officer designated for that purpose.

9. Regulations controlling the conduct of professional land locators.

10. Provision for uniformity of fees in public-land proceedings.

11. Statutory provision for another Assistant Commissioner of the General Land Office.

OFFICE OF INDIAN AFFAIRS.

The Indian Bureau combines in its administrative duties more varied and intricate problems than any other bureau under this department, dealing as it does with not only material subjects involving expenditures of vast sums, but of human problems connected with the working out of the civilization of a race of people within our borders though alien to our form of government and the customs of white men. It has been remarked, in fact, that the activities of this bureau comprehend all that is ordinarily met with in the course of human life. Throughout the Indian Service there are some 6,000 employees, distributed over 26 States, handling property approximately valued at \$1,000,000,000. In the early days of this bureau's existence, the Indians were dealt with as several large

bodies corresponding to the Indian reservations. To-day the Indian Office is engaged in distributing this vast estate to the individual owners, having due regard to the material and moral welfare of the individuals concerned. Of the 324,000 Indians, a large number are as yet unfitted to assume the duties of full citizenship. The work to be done, therefore, is not merely a physical distribution of this estate, but the preparing of the owners thereof for the fulfillment of their obligations to the Government and to themselves.

Heirs of deceased Indians.—One of the tasks now before the Indian Bureau is the determining of the heirs of deceased Indian allottees. It is estimated that there are now pending more than 40,000 heirship cases, representing estates valued at approximately \$60,000,000.

Allotments.—Another large work is the completion of the allotment of lands to individual Indians, it being estimated that there are probably more than 120,000 unallotted Indians on the reservations throughout the Western States, there having been allotted about 180,000, covering an area of about 34,000,000 acres.

Timber lands.—As the timber areas of the country become depleted the value and importance of the timber lands on Indian reservations and owned by the Indians increase. It is estimated that the stumpage value of the timber on Indian lands will exceed \$80,000,000. One of the problems confronting the Indian Bureau is the conservation of these Indian timber lands in such manner as to promote the sale of the ripened and matured timber and procure thereby a sustained revenue to the Indians, providing for their agricultural and industrial development and growth.

There are on many of the Indian reservations large areas of irrigable land requiring business-like administration.

The allotment of lands, the operations of the Indian forests, the development of the irrigable lands, and other activities of the Indian Service, including the education of the Indian youth, the preservation of the health of the Indian population, the development of agricultural, stock-raising, and other industrial pursuits, the procuring of employment for the graduates of Indian schools, the furnishing of educational facilities, are each receiving the most considerate attention.

Health.—The health conditions on Indian reservations are such as to warrant increased activity to bring about remedies for existing evils and to carry forward with greater rapidity the improvements now being inaugurated. It is reported that there are approximately 25,000 Indians suffering from tuberculosis, while available hospital facilities will accommodate but a few hundred. During the last fiscal year 1,905 Indians were reported as having died from tuberculosis, and this probably represents not more than 75 per cent of the total number who have succumbed to this disease. In order to check and control this condition, a large expenditure of funds will be necessary and

the situation is so grave that immediate action should be taken. The Indian Office is now making a careful study of the housing conditions of the Indians and improvements along this line will greatly facilitate the checking of tuberculosis. Another disease to which the Indians seem particularly susceptible is trachoma, which is infectious, and inasmuch as the Indians are living to a considerable extent among the white population, the checking of this disease becomes a serious problem in which the white citizens are consequently much concerned.

Agriculture and stock raising.—Agriculture and stock raising are receiving special attention. The reservations are largely divided into farm or stock districts under the immediate charge of farmers or stockmen, and in connection with the agricultural work experimental farms are being operated on some of the reservations, including Pima, San Juan, Shoshone, Pala, Colville, Soboba, San Xavier, Shivwits, and Leupp, and all the reservation Indian school farms are being used to demonstrate to the older Indians the possibilities of the soil in the several sections of the country. These farms also produce an income which is used in support of the school plant.

Roads.—Another matter receiving attention is the construction of good roads through Indian reservations. Through cooperation with the officials of the counties adjoining and including the reservations, much has been accomplished in the way of road and bridge building.

Transfer of offices.—The headquarters of the chief of irrigation and those of the medical supervisor, the chief supervisor of special agents, the supervisor of schools, the supervisor of farming, the supervisor of construction, and the supervisor of stock have recently been concentrated at Washington, where the work of these several branches of the service will be brought under the immediate direction of the Commissioner of Indian Affairs. It is believed that this change in the organization will effect a large saving of funds and materially increase the efficiency of the service.

Mining.—Mining on Indian lands, particularly for oil, has received increased impetus during the past fiscal year, owing to the discovery of additional oil pools in the Osage Nation and on Indian lands west and south thereof. The department is pleased to note the advance in the price of crude oil to a maximum of 88 cents per barrel on June 30 (it has since that time advanced to more than a dollar per barrel). During the past fiscal year more than 49,176,000 barrels (estimated) were sold from the territory of the Five Civilized Tribes in Oklahoma, producing a revenue of \$1,496,179. During the year oil was discovered in the State of Washington near the Quinalt Reservation and many applications for permission to negotiate leases of lands on that reservation have been received, but the approval of such were withheld pending the determination of the existence of oil in commercial quantities.

FIVE CIVILIZED TRIBES.

The report of the Commissioner to the Five Civilized Tribes shows that satisfactory progress has been made in the matter of finally closing the affairs of the Five Civilized Tribes. The citizenship rolls were closed by law on March 4, 1907. The work of allotment is practically completed with the exception of the delivery of certain allotment deeds and other minor details. The equalization of allotments has been about completed in the Cherokee, Choctaw, and Chickasaw Nations with the exception of about \$307,000. In many cases the amount to be paid is so small that it offers no inducement for the allottee to make application or go to any trouble to secure the same. No steps have as yet been taken to equalize allotments in the Creek Nation, as it will require legislation before this can be done. Under the Creek agreement each citizen was entitled to an allotment of land at the appraised value of \$1,040, and where the appraised value of the allotment was less than that amount they were to receive the difference in money. The appraised value of the land subject to allotment fell short of the required amount necessary to give each citizen a full allotment by nearly \$6,913,000, while the Creek tribal funds aggregated only about \$3,700,000.

Allotments in the Seminole Nation.—Allotments to the 3,119 citizens of the Seminole Nation have been completed. The remaining unallotted land, 680 acres, was sold during the past year. All allotment deeds in this nation have been issued with the exception of 879. All Seminole tribal property has been disposed of with the exception of the two tribal boarding schools, including 320 acres each.

Allotments in the Creek Nation.—Allotments have been made to the 18,716 citizens of the Creek Nation and the remaining unallotted land, 1,754 acres, was advertised and disposed of with the exception of 343 acres. The work yet to be performed in this nation consists of equalization of allotments when proper legislation is secured, sale of the remaining unallotted lands, sale of 203 town lots, and disposition of certain suits involving town lots. There are four boarding schools in this nation, including 40 acres each, still maintained by the tribe. Also the Creek capitol building at Okmulgee, including the land upon which it is located, has not yet been disposed of.

Allotments in the Cherokee Nation.—The allotment work in the Cherokee Nation to the 41,696 citizens, which was considerably delayed by reason of litigation affecting the rights of certain new-born children, which was finally determined in favor of such children, has now been about completed, with the exception of the delivery of a few patents. No patents have yet been issued to 165 new-born Cherokees, for the reason that a portion of their allotments are involved in suits, having been clouded by illegal conveyances. All

of the unallotted land in this nation has been disposed of with the exception of 925 acres. No unallotted land was sold in this nation during the past year. The work yet to be performed in this nation consists of the sale of the remaining unallotted lands, proper conveyance of about 272 cemeteries, and issuance of patents to unallotted lands as final payments are made. It appears that all tribal property in this nation, except unallotted land, has been disposed of, the Cherokee Orphan Training School having been conveyed to the United States since July 1, 1913, as provided by the Indian appropriation act of June 30, 1913.

Allotments in the Choctaw and Chickasaw Nations.—In the Choctaw and Chickasaw Nations allotments have been completed to the 37,685 citizens. Three separate sales of the unallotted and timber lands were held during the year at which there were sold 898,083 acres for \$4,474,867. The work of surveying and appraising the surface of segregated coal and asphalt lands in these nations was not completed by December 1, 1912, the limit fixed by law and such work was, therefore, suspended on that date and not again resumed during the fiscal year. The larger portion of the survey work was completed but the work of appraisement which was performed will have to be done over again, owing to the resignation of the appraisers, effective November 14, 1912, and to the fact that the schedules of appraisement submitted by them were not satisfactory and were not approved. The work to be performed in these nations consists of the sale of the remaining unallotted lands and timber aggregating about 1,278,000 acres, all of which is located in the Choctaw Nation, except 7,839 acres in the Chickasaw Nation, now being advertised, the completion of the survey and appraisement of the surface of the segregated coal and asphalt lands aggregating about 432,000 acres and the sale of said surface after the work of appraisement is completed, which is now under way. There will also remain the coal and asphalt deposits underlying these lands to be disposed of, which will require further legislation. There are also in these nations about 2,250 town lots to be disposed of, various cemetery tracts, etc., to be conveyed to the proper parties, four tribal boarding schools in the Choctaw Nation, two tribal boarding schools in the Chickasaw Nation, the Choctaw capitol building at Tuskahoma, and various other minor tribal properties to be disposed of.

Unallotted land sold.—In the Five Civilized Tribes there were disposed of during the year ended June 30, 1913, a total of 900,175 acres of unallotted land, the purchase price being \$4,494,683, making a total sale since the first sales in 1910 of 1,849,722 acres at a purchase price of \$10,745,495.05, of which amount \$5,315,785.46 has already been paid in, the deferred payments bearing 6 per cent interest from date of sale. There was collected during the year and deposited to the

credit of the tribes, aside from the proceeds from the sale of unallotted lands, the following amounts:

For grazing fees.....	\$116, 134. 22
Royalty on coal and asphalt tribal leases.....	217, 226. 61
Payment on town lots.....	40, 338. 64
Other sources.....	64, 091. 73
Total.....	437, 791. 20

Coal and asphalt leases.—There are 109 tribal coal leases, covering 99,800 acres, and 7 asphalt leases, covering 4,960 acres, entered into from 1899 to 1902, running for a period of 30 years from date, covering portions of the segregated coal and asphalt lands in the Choctaw and Chickasaw Nations, the royalty on coal being 8 cents per ton, mine run, and on asphalt 10 cents per ton for crude and 60 cents per ton for refined asphalt. During the year 3,103,071 tons of coal and 4,752 tons of asphalt were mined. The act of March 4, 1913, provided for leasing additional acreage of segregated coal lands to operators of coal mines, and regulations were prescribed on June 18, 1913, under said act. No additional leases have been made up to June 30, 1913. In February, 1913, the Bureau of Mines was charged with the duty of inspecting the physical operation of coal, asphalt, and other mines on tribal land and also mining operations on allotments of restricted Indians, and Mr. J. J. Rutledge, a representative of the Bureau of Mines, was stationed in Oklahoma for that purpose, with headquarters at McAlester.

Work to be done.—While the work of allotment and disposition of tribal property has been about completed, except as referred to above, there is a vast amount of detail work yet necessary to be performed, the importance and volume of which is not readily understood by one not familiar with such work. It is necessary to complete the allotment plats, show thereon the sales of land, pay out the money necessary to equalize allotments, and make proper notation thereof on the records; in the case of deceased allottees ascertain the heirs or the persons entitled to receive payment, examine guardianship papers, etc., open up accounts with each purchaser of unallotted land, receive payment and compute interest on each installment, prepare patents as final payments are made, and in general complete the records in shape to be permanently filed, as such records will be the basis of all titles to land in the Five Civilized Tribes. In performing this work it is necessary to make numerous field investigations, take testimony, etc., in addition to the actual work of advertising and selling the unallotted lands and remaining property of the tribes. It will also be necessary when payment of tribal funds is to be made, after all tribal property is disposed of, or partial payment, if desired, to be made before that time, for rolls to be prepared showing the amount due each member.

Expenses of tribal governments.—The expenses of the tribal governments of the Five Civilized Tribes during the year, including tribal attorneys, amounted to \$89,628.84. At the present time the tribal government consists of the principal chief, or governor, with such clerical force as is necessary. Practically no governmental functions are being exercised, the principal duties being to look after the interests of the tribe generally and execute conveyances, etc., until such time as tribal affairs are finally closed and the tribal government can be dispensed with entirely. Tribal attorneys are also employed in each of the nations, except the Seminole, to represent the tribes in litigation affecting their interests, and during the past year the scope of the duties performed by said tribal attorney has been considerably enlarged by authoring them to take action in probate matters and generally to protect the estates of minors and dependent citizens from waste and dissipation.

Total receipts.—During the past year there was received \$3,535,878.15, which was thereafter disposed of or accounted for, making a total of \$7,071,756.30 handled by the commissioner's office pertaining to tribal affairs.

Work of Union Agency.—Matters affecting individual Indians of the Five Civilized Tribes within the restricted class are handled by the United States Indian superintendent at Union Agency. Of the total membership of the Five Civilized Tribes, approximately 101,000, nearly one-third, are within the restricted class, which comprises all persons of one-half or more Indian blood. The work in connection with these Indians includes the making of oil and gas and other leases, the collection, supervision, and disbursement of royalties therefrom, the removal of restrictions, sales of land, and the handling of the moneys derived from such sales for the benefit of the Indian. A grand total of \$9,968,363.90 was handled by the Union Agency during the fiscal year. Also, much work of a general character is done, in placing Indian pupils in school, encouraging industrial advancement, providing better sanitary conditions, and making investigations and cooperating with State officials in probate and other matters affecting estates of minor and dependent citizens of the Five Civilized Tribes.

Probate matters.—According to the reports submitted, probate matters affecting minor Indian citizens of the Five Civilized Tribes are generally unsatisfactory, largely because of the great volume of such business in the local courts and the lack of State machinery and the defective or inadequate statutory probate procedure. In some counties the reports indicate a deplorable situation, which every effort should be made to remedy. The greater number of these probate cases involve the estates of part-blood Indians in the unrestricted class, where the department can give no affirmative relief,

except in an advisory or assisting capacity, to the courts. A bill regulating procedure in the probate courts, including deeds to the lands where the heirs are full-blood Indians, was introduced in the last legislature of the State of Oklahoma and its passage urged by the governor and the whole delegation in Congress, but failed. During the past fiscal year the local representatives of the department in the Five Civilized Tribes and the tribal attorneys have cooperated with the probate courts in protecting the estates of minor and dependent citizens of the Five Civilized Tribes, with excellent results, so far as the funds available would permit. It is estimated that there are fifty or sixty thousand living minors, members of the Five Civilized Tribes, many of whose allotments are valuable for oil and gas or other minerals.

Removal of restrictions.—During the past fiscal year 1,238 applications for removal of restrictions were made, and the records show that under the act of May 27, 1908, restrictions have been removed unconditionally on 109,375.21 acres, and conditionally on 221,743.71 acres. In the latter case the land is sold and the proceeds disbursed for the benefit of the Indian, under the supervision of the department. During the year 1,650 tracts of land, from which restrictions have been removed, were offered for sale, of which 785 tracts were sold, aggregating 51,817.89 acres, the consideration being \$502,406.36.

Oil and gas leases.—Four thousand eight hundred and five leases, mostly oil and gas, were filed during the year, being a large increase over previous years. The activity has been noticed in the oil and gas business during the year, owing to the discovery of new fields, and the increased price of oil. The total oil and gas royalties received during the year, by the United States Indian superintendent for the benefit of Indian lessors, was \$1,496,179.31, and 49,176,000 barrels of oil were sold from the territory of the Five Civilized Tribes, including leases on both restricted and unrestricted land.

Education.—Of the \$300,000 carried by the Indian appropriation act of August 24, 1912, it is shown that \$292,176.86 was paid to 2,284 school districts, at which there were enrolled 23,442 Indian pupils, and 2,284 freedman pupils. This appropriation was made by Congress to assist the public schools of the State of Oklahoma within the territory occupied by the Five Civilized Tribes, for the reason that so much of the allotted land was not subject to taxation that sufficient revenue was not received from taxation to properly maintain schools. A similar appropriation in the same amount is contained in the Indian appropriation act of June 30, 1913.

The superintendent urgently recommends a more aggressive policy for the education of Indian children, and particularly the rapidly growing class of full-bloods that are not officially recognized as Indians, and have no allotments, except as they may inherit. He also calls especial attention to the condition of the health of the full-

blood class, and based upon an investigation made by the Indian Medical Service recommends specific appropriations for sanitariums and medical assistance among these Indians, in the total sum of \$75,000.

Needed legislation.—The work pertaining to the winding up of the tribal affairs of the Five Civilized Tribes is rapidly approaching completion, although it will be several years before all payments are finally made on unallotted tribal lands and other tribal properties sold or now being disposed of and the proceeds thereof, together with other moneys, which will aggregate many millions of dollars, can be distributed to the members of the different tribes entitled thereto. Before such work can be finished and tribal funds distributed additional legislation will be required—

First. To equalize allotments by payment in money of various amounts to approximately 17,780 Creek citizens involving several million dollars.

Second. Provision for the final disposition of the coal and asphalt minerals in the Choctaw and Chickasaw Nations, reports pertaining to the valuation of which are contained in Senate Document No. 390, Sixty-first Congress, second session.

Third. Provision to pay per capita payments to Indians from time to time from moneys on hand as the Secretary deems proper.

Fourth. The disposition of 12 tribal boarding schools, together with the land reserved for each, which are now being maintained from tribal funds, or some arrangements made for the setting aside of specific amounts for their permanent maintenance in order that other tribal funds may be distributed.

With reference to the affairs of the individual Indian, Congress has provided that all lands allotted, including homesteads of allottees having less than half blood, including minors, shall be free from all restrictions and that all land, except homesteads, of those having one-half or more than half and less than three-quarters Indian blood, as shown by allotment records, shall be free from all restrictions, and that the restrictions on land allotted to all other enrolled Indians, including minors, may be removed wholly or in part by the Secretary of the Interior; therefore, no further legislation would seem advisable relative to removal of further restrictions, the Secretary of the Interior being authorized to release those now under the supervision of the department as he deems advisable.

Many of the restricted class of Indians, however, principally full bloods, are not living upon land selected by them and designated as their homesteads, which in the Choctaw and Chickasaw Nations cover an average of 160 acres of land and in the other nations 40 acres each. Legislation seems to be advisable to permit Indians, with the approval of the department, to change and have designated from their allotted lands not exceeding 40 acres for a homestead,

which should be their home place and not be subject to lease, thereby insuring for such Indians a home. Under existing law the allotted lands other than homestead of such Indians may be leased for five years, and the lands embraced in their homesteads for one year without the approval of the department. As a result many Indians have leased their entire holdings for grossly inadequate rentals, and where leases are canceled or set aside for various reasons new leases are not infrequently made affording no better compensation. The Commissioner to the Five Civilized Tribes renews the recommendation previously made by him that leases be approved by some local authority designated by the Commissioner of Indian Affairs. Such action would result in better leases being obtained, lands properly cultivated and improved and, by requiring portions of the revenues derived therefrom, as also from the proceeds of sales of portions of allotted lands, to be partially expended in improving his home place, the conditions of the Indian, as well as the community generally, would be greatly benefited.

Ample appropriation should also be made for the purpose of improving the sanitary and physical conditions of the more ignorant full-blood Indians.

Until land can be taxed and educational facilities provided by the State, liberal appropriation should be made and provided for the compulsory education of Indian children, especially full bloods.

In view of the fact that State probate courts have jurisdiction over estates and property of all Indian minors and as investigations made by the Creek and Cherokee national attorneys, and others under direction of the superintendent of the Union Agency, have conclusively shown that in some districts the estates of such minors are not being protected, and vast sums of money have been recovered during the past year through the Union Agency and tribal attorneys, the Commissioner to the Five Tribes suggests that Congress provide further appropriations for the better protection of the estates of restricted Indian minors and, if it is considered that Federal appropriations can not properly be made for such purposes in connection with estates of Indian minors no longer under control of the Government, that, where found advisable and desired by tribal representatives, tribal funds be used temporarily at least for the purpose of making necessary investigations and further assisting the county officials in protecting the estates of unrestricted minor Indians until the State legislature may enact laws insuring better protection. Considering the extent of country embraced within the Five Tribes, the large population of white people, and the prevailing conditions, as shown by reports, it is apparent that some action along these lines is needed better to protect the interest of Indians who are under supervision of the department as well as certain classes of minors who are not.

PENSION OFFICE.

Names on pension roll.—The pension roll bore the names of 860,294 pensioners of all classes at the beginning of the year. There were 19,758 names added to the roll in the course of the year by original, restoration, and renewal allowances; and the names lost by death, remarriage, limitation, failure to claim for three years (sec. 4719, R. S.), and other causes numbered 59,852. There was thus a net loss to the roll of 40,094 names, and the number borne on the roll at the close of the year was 820,200. Of this number 503,633 represented persons who rendered service in the Army or Navy of the United States, including 328 Army nurses, the remaining 316,567 being the names of persons pensioned as widows and dependents.

First payments.—There were 433,995 first payments on new issues made during the year, carrying a total of \$18,250,225.26. The number of such payments made in the preceding year was 78,781, involving an amount of \$4,096,502.81. This increase in first payments was due to the large number of allowances under the act of May 11, 1912, increasing rates of pension to survivors of the Mexican and Civil wars, the names on the roll under said act being increased from 13,246 at the beginning of the year to 379,064 at the close, and some thousands more having been added and lost in the course of the year.

Unexpended balances of appropriation.—The unexpended balances of appropriations at the close of the year were as follows:

For Army and Navy pensions.....	\$5, 348, 215. 65
For fees and expenses, examining surgeons.....	193, 833. 77
For salaries, clerk hire, rent and contingent expenses, pension agencies and disbursing office.....	28, 564. 61
For salaries, Bureau of Pensions.....	26, 974. 82
For employment of temporary clerks.....	25, 566. 55
For salaries, per diem and expenses, special examiners.....	70, 036. 48
Total	5, 693, 191. 88

Disbursements for pensions.—The amount disbursed in the payment of pensions during the year was \$174,171,660.80, an increase over the preceding year of \$21,185,227, and over the highest expenditure of any year prior thereto (made in 1909) of \$12,197,957.03, and the cost of administration of the bureau for the year, including the payment of pensions, was \$2,543,246.59, an amount in excess of the cost for the previous year by \$94,389.28. These increases in expenditure for pensions and cost of administration are chargeable to the new legislation referred to in the preceding paragraph. It is to be noted, however, that the latter item includes an expenditure of \$274,433.45 from an appropriation of \$300,000 made for the employment of temporary clerks during the year to expedite the settlement of claims filed under the new law.

The amount appropriated for the payment of pensions for the fiscal year 1914 is \$180,000,000, and it is estimated that \$170,000,000 will need to be appropriated for the fiscal year 1915.

The amount disbursed for pensions from July 1, 1790, to June 30, 1865, is given as \$96,445,444.23. The total of pension disbursements for the period from the latter date to June 30, 1913, is shown to be \$4,461,094,380.45, and the cost of maintenance of the pension system for that period reached a total of \$125,871,965.64, making the total expenditure on account of pensions from July 1, 1790, to June 30, 1913, with cost of maintenance as far as shown, \$4,683,411,790.32, and the total paid out for pensions, exclusive of cost of maintenance, \$4,557,539,824.68, of which amount \$4,294,596,944.47 is charged to allowances made on the basis of services rendered in the Civil War.

Method of paying pensions.—Important changes in the method of paying pensions were prescribed by the act of August 17, 1912 (37 Stat., 311), in pursuance of recommendations made in the Commissioner's annual report for 1911. The act provided for the establishment on February 1, 1913, of a disbursing office in the bureau to take the place of the 18 pension agencies, and also directed that not later than January 1, 1913, pensions should be paid in certain cases by checks drawn without separate vouchers or receipts. These provisions were fully complied with, both as to the changes in method and the times when they should be in operation. The first payment without vouchers was made for the quarter ended December 4, 1912, and the disbursing office was in full operation on February 1, 1913. The changes were carried into effect without interruption in pension payments and without appreciable loss or damage to the records, machinery, and other equipment brought in from the pension agencies, notwithstanding they were required to be made concurrently and while the bureau was in the midst of the great volume of work incident to the adjudication of the half million of claims filed under the act of May 11, 1912.

Certificates issued.—There were 443,622 pension certificates issued during the year, as compared with 90,922 issued during the prior year and 328,676 issued in 1908—the largest output of any previous year in the bureau's history. This increase in number of certificates issued was due to claims adjudicated under the act of May 11, 1912. There were 504,938 applications filed under said act from the date of its approval to June 30, 1913, and 429,369 pension certificates were issued thereunder during that period, 894 of which were in original allowances. The act was amended by an act approved March 4, 1913, to provide, among other things, that further increase of rate thereunder on account of advancing age should be made without further application by the pensioner, to commence from the date of his

attaining the age entitling him to the increased rating. In claims adjudicated since this amendment future ratings have been given in the certificates to take effect automatically when the pensioner shall attain the age entitling him thereto.

Applications filed.—The total number of applications filed during the year was 139,565, and 471,363 claims were adjudicated; 444,558 of these were admitted and 26,576 were rejected, while in 229 cases certificates were not issued because of there being no benefit to accrue to the claimant.

Payments to widows and minor children.—Orders for the payment to widows or minor children of pension accrued to date of death in the cases of deceased pensioners or claimants for pension were issued in 12,794 cases, and claims for the payment of pension so accrued as reimbursement of expenses of last sickness and burial were allowed in 5,710 cases during the year.

Special pension acts.—There have been 42,337 grants of pension made by special acts of Congress since 1861, and there were 22,016 of such grants remaining on the roll at the close of the year, having an annual value of \$6,699,096. Only a part of this value, however, attaches to the special act grants, as most of them provided merely increases in rates of pension previously granted under the general pension laws.

Offenses against the pension laws.—There were 61 cases of offenses against the pension laws presented to the Department of Justice for prosecution, and indictments were found in a like number. There were 49 convictions secured in 51 cases brought to trial during the year, and there were 95 cases pending in the hands of United States attorneys at the close of the year. Three civil suits were disposed of, two by judgments in favor of the Government and one by discontinuance at the instance of the United States attorney. Two civil suits were pending at the close of the year. The sum of \$2,523.62 was recovered through refundments.

Bounty-land warrants.—During the year four original bounty-land warrants were issued, three for 160 acres each and one for 80 acres, in all 560 acres. A duplicate of a lost warrant for 40 acres was also issued. The total number of bounty-land warrants issued to the close of the fiscal year 1913 was 598,694, granting 68,792,830 acres.

Pensions on account of War of 1812.—The names of 199 widows of soldiers of the War of 1812 were on the roll at the close of the year. The last surviving pensioned soldier of that war died in 1905. The last surviving soldier of the Revolutionary War died April 5, 1869, and the last surviving widow of a soldier of that war died November 11, 1906.

APPEALS IN PENSION AND BOUNTY LAND CLAIMS.

Elsewhere in the table shown in the report of the office of the Assistant Attorney General the statistics concerning the work of the pension-appeal section during the past year are given in detail. There were pending October 1, 1912, 806 undecided appeals and motions. During the year 2,660 appeals and motions have been docketed, making in all 3,466 cases presented for decision. Of these, 2,658 were disposed of, leaving 808 pending.

Contrasted with the work of the preceding year, the figures show a material increase in appeals filed, contrary to all expectations when the former board of pension appeals was abolished. The report also shows extraordinary industry on the part of the section, numerically the same as in the preceding year, to keep current with the work. Appeals and motions exceeding by 459 the number filed in the year ended October 1, 1912, while the number of cases decided outnumbered those in the preceding year by 767. Despite this, there are now 808 pending cases as compared with 806 a year ago. The reason is to be found in the recent increase in the number of appeals, beginning about the last of July, and especially during September. If the increase is maintained there will be more than 4,000 cases presented for decision during the ensuing year. Of the appeals, in 2,346 cases the action of the Commissioner was affirmed, in 228 reversed, and 21 appeals were dismissed. Thus, in about 9 per cent of the appealed cases error was corrected. But this relates merely to docketed appeals, cases in which the bureau did not recede from its adverse action. Appeals are filed in the bureau, and under the rules the bureau has 30 days in which to report on each appeal. It may recede from its adverse action and satisfy the contentions of the appellant. It is only in those cases where it adheres to the action from which appeal is taken that the appeals are forwarded to this office and entered upon the docket. Of the total number of appeals filed in the bureau last year there was recession from the adverse action in about 16 per cent of the claims; hence in one-fourth of the cases in which appeal was taken the appellants were benefited, either by the action of the bureau or by the action of the pension-appeal section.

In the estimates it is recommended that the board of pension appeals be reestablished. The reasons were stated in the report for last year and in a note attached to the estimates. The same reasons now exist, but with greater force. The board was abolished on the theory that the appeals would be less and less. There were but 532 cases pending at that time. It has been necessary to retain on the work the same number of attorneys and medical men that constituted the board at the time of its abolishment. Appeals have increased

since the abolishment of the board, and, in face of the utmost industry, the arrears have correspondingly increased. The reason for transferring the work to the Assistant Attorney General's office, where it is all finally reviewed by an attorney acting for the Assistant Attorney General, no longer exists. The board should be reestablished.

PATENT OFFICE.

There were received during the fiscal year ended June 30, 1913, 67,986 applications for mechanical patents, 1,930 applications for design patents, 172 applications for reissues, 7,053 applications for trade-marks, 926 applications for labels, and 344 applications for prints. There were 38,754 patents granted, including reissues and designs, and 5,166 trade-marks, 664 labels, and 254 prints registered. The number of patents that expired is 21,427. The number of allowed applications which were by operation of law forfeited for non-payment of the final fees was 6,970. These statistics show a slight decrease in the volume of business during the last fiscal year, the total number of applications for patents for inventions, for designs, for reissue of patents, registration of trade-marks, registration of labels, and registration of prints, disclaimers to patents, and appeals on the merits is 80,084. The total of all applications for the fiscal year immediately previous was 81,459 for the same period, which shows a decrease of 1,375 applications received.

The total receipts of the office were \$2,082,490.23. The total expenditures, including salaries, amounted to \$1,924,459.42, and the net surplus over expenditures was \$158,030.81, making a grand total of net surplus of receipts over all expenditures \$7,290,103.57.

To account for the great difference in surplus between the fiscal years 1912 and 1913, the former being \$74,823.49 and the latter \$158,030.81, an increase of \$83,207.32, attention is called to the fact that a single item of \$65,000 was saved by the discontinuation of the printing of the library edition of copies of patents. This large expenditure each year was found not to be justified in view of the fact that very few libraries subscribed.

There is an urgent and ever growing need for a new building for the Patent Office. Plans for the accomplishment of this took definite form when an appropriation of \$5,000 was made in the public buildings bill at the last session of Congress to be expended for the preparation of plans, and a commission was appointed, consisting of the Secretary of the Interior, the Commissioner of Patents, and the Supervising Architect of the Treasury, for the purpose of investigations as to available sites and other matters.

On April 1, 1913, the convention of the International Union for the Protection of Industrial Property became effective so far as con-

cerned the adhering nations. This convention, which was amendatory to the Paris convention of 1883, was signed at Washington June 2, 1911. Ratifications have been deposited with the Department of State on behalf of the following Governments: Germany, Austria (including Hungary, Bosnia, and Herzegovina), Dominican Republic, Spain, United States, France, Great Britain, Italy, Japan, Mexico, Norway, Netherlands, Portugal, Switzerland, and Tunis. All future ratifications of this convention are, under the provisions of the protocol, transmitted directly to the International Bureau at Berne.

BUREAU OF EDUCATION.

The Commissioner of Education during the year established two new divisions, namely, the division of negro education and division of kindergarten education.

Negro education.—The division of negro education was established with the cooperation of the trustees of the Phelps-Stokes fund. Besides a general preliminary study of schools for negroes in the South, it has made a first-hand study of the high, private, and industrial schools for colored people in Alabama, has collected a great deal of information regarding those schools, and is preparing a preliminary report thereon. It has been able to render much assistance to persons making inquiries regarding the reliability of schools for negroes.

Kindergarten education.—The division of kindergarten education was established with the cooperation of the National Kindergarten Association on March 3, 1913. It has made a survey of the status of kindergartens in public schools and of all other kinds of kindergartens in the United States. In cooperation with the bureau a committee of 20 kindergarten training teachers has been created to assist in making a survey of kindergarten training schools with the purpose of formulating standards for such schools.

Colleges of agriculture and mechanic arts.—The reports of the colleges of agriculture and mechanic arts endowed under the acts of Congress of August 30, 1890, and March 4, 1907, were received and examined. The expenditures were found to have been made for the purposes specified in the acts. The total amount paid out by the Government for these institutions since 1890 is \$33,802,000. Fifty-two institutions for higher education were visited by specialists of the bureau. Several inspections were made at the request of the institutions, and detailed reports of the investigations were made to the officers of such institutions.

Rural education.—As a means for the improvement of rural schoolhouses, the bureau prepared, for lending purposes, six cardboard models of each of three different types of schoolhouses. The demand for the loan of these models received from school officials, lumbermen,

associations, health boards, normal schools, and others has been overwhelming, and it has been possible thus far to comply with only a very limited number of the requests. This experiment has been so successful that the bureau must undoubtedly extend this service as soon as funds therefor can be made available. In addition to this service, special advice regarding the construction of schoolhouses has been given to school officials in the States of Alabama, California, Florida, Georgia, Indiana, Kentucky, Michigan, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, and Virginia. A special agent in school hygiene rendered valuable service to the International Congress on Hygiene and Demography held in Washington City in the fall of 1912, and had charge of the educational exhibit held in connection with the congress; he also rendered much assistance in the preparation of an exhibit for the International Congress on School Hygiene at Buffalo, N. Y.

The increase of the appropriation "for the investigation of rural education, industrial education, and school hygiene" rendered possible the more complete organization of the field work in rural education by the appointment of a chief of field service and three specialists, who were assigned to duty as follows: The chief of field service in charge of the work in Southern States, with headquarters at Richmond, Va.; one specialist, with headquarters at Salem, Oreg., in charge of the work in the Western States; one, with headquarters at Kirksville, Mo., has charge of the work in the Middle Western States; and the third has charge of the work in the Eastern and Northern States. These persons have made special studies of the condition of rural education in their several districts and have collected a large amount of information. In the South the bureau has cooperated with the southern education board and the conference of education in the South, with the supervisors of rural education, and the directors of rural school improvement in the several Southern States, and has made a special study of the means by which the school terms are being extended, better preparation given teachers, and the standards of the schools improved.

One specialist and two collaborators were detailed to make a careful study of the rural schools of Denmark for the purpose of finding and reporting the means by which they have become such a vital element in the rural life of that country. Three months were spent in going to Denmark and making personal inspection of typical rural schools. The results of these studies will be published in a series of four or five bulletins and will form a valuable contribution to the literature of rural education.

At the suggestion of the Commissioner, State and county school officers in most of the States of the Union have agreed to begin a

nation-wide campaign for a minimum rural-school term of 160 days, a minimum qualification of four years of high school and two years of college or normal school education for rural-school teachers, and for good libraries in all the rural public schools, and also to make a better adjustment of the work of the rural schools to the needs of country life.

The collector and compiler of statistics spent three months studying the schools of certain cantons and cities of Switzerland for the special purpose of reporting on the methods by which the work of these schools is adapted to the needs of the people, interpreting these methods in terms of American methods, and showing how they may be adapted to the conditions and needs of American schools. The school systems of 21 cities in the United States were visited and studied.

Publications.—The publications issued by the bureau during the year included two volumes of the annual report, the annual statement of the Commissioner, 44 numbers of the bulletin, 3 numbers of the library circular, and 1 miscellaneous publication. Of the above-mentioned bulletins 9 related to rural education and 4 to industrial education.

Teachers' salaries.—In cooperation with a committee of the National Education Association the bureau is prosecuting an inquiry into the subject of teachers' salaries in the United States.

Schools for natives of Alaska.—In Alaska 76 schools were maintained for the education of the natives, with an enrollment of 3,563. The field force consisted of 5 superintendents, 106 teachers, 9 physicians, 9 nurses, and 3 hospital attendants.

The prosperity of the Hyدابurg colony upon the tract on Prince of Wales Island, reserved for its use by Executive order, where the natives successfully conduct their own store and sawmill, caused the natives of Klukwan and Klawock, in southeastern Alaska, to desire a similar reservation upon which to conduct their own enterprises. By Executive order a tract with an approximate area of 800 acres bordering the Chilkat River has been reserved for the exclusive use of the Klukwan natives. Much of this land has agricultural value, and gardening will be systematically taught by the teacher of the United States public school. The proposed reservation at Klawock is within the Tongass National Forest; arrangements are being made with the Forest Service for its reservation.

Medical work among natives of Alaska.—Among the most urgent needs of the natives of Alaska is protection against the diseases which prevail among them to an alarming extent. Accordingly, without neglecting the work in the schoolrooms and the social work in the native villages, special attention was given during the year to the medical and sanitary work.

Of the appropriation "Education of the natives of Alaska" for the fiscal year ended June 30, 1913, \$32,000 was expended (1) in maintaining hospitals in rented buildings at Juneau and Nushagak; (2) in maintaining improvised hospitals in school buildings at Nulato and Kotzebue; (3) in payments under contracts with the Holy Cross Hospital at Nome, with the Fairhaven Hospital at Candle, and with the Cordova Hospital for the treatment of diseased natives upon the application of a superintendent, physician, or teacher in the Alaska school service; (4) in the employment of physicians and nurses in the hospitals and in field work in their respective districts; and (5) in furnishing medicines and medical books to the teachers for use in relieving minor ailments.

Dr. Krulish, of the Public Health Service, who made an investigation of the health conditions in the native settlements in southeastern Alaska, in western Alaska, on the Yukon River, and in the vicinity of Nome, states that, in his opinion, 15 per cent of the native population of Alaska is infected with tuberculosis in its varying forms, both active and latent, while in 7 per cent it is present in its active stages. Trachoma, rheumatism, and venereal diseases also prevail to a considerable extent in many of the native villages. An appropriation of at least \$125,000 is needed to establish among the natives of Alaska an Alaska medical service with an efficient organization. The good results already accomplished by the present inadequate medical service demonstrate that disease among the natives of Alaska could be eradicated if funds are provided for the establishment of well-equipped hospitals in important centers and for the employment of a sufficient number of physicians and nurses.

Reindeer service in Alaska.—The latest statistics regarding the reindeer service are those of the fiscal year 1912, according to which the total number of reindeer in Alaska June 30, 1912, was 38,476, distributed among 54 herds. Of the 38,476 reindeer, 24,068, or 62.5 per cent, were owned by 633 natives; 3,776, or 9.8 per cent, were owned by the United States; 4,511, or 11.7 per cent, were owned by missions; and 6,121, or 16 per cent, were owned by Lapps. The total income of the natives from the reindeer industry during the fiscal year 1911-12, exclusive of the value of the meat and hides used by the natives themselves, was \$44,885.04.

In order to make the natives preserve and accumulate the reindeer intrusted to them and to preclude the possibility of the reindeer industry being taken from the natives, no native has been permitted to sell or otherwise dispose of female reindeer to any person other than a native of Alaska. Strict adherence to this fundamental principle has built up for the natives of northern and western Alaska this industry, which is especially adapted to them and which affords them assured means of support. There is grave danger that grant-

ing to the natives permission to dispose of female reindeer to white men would rapidly deprive the natives of their reindeer and destroy this great native industry, which is the result of 20 years of careful oversight and fostering care.

There is urgent need for the more rapid distribution of the reindeer in Alaska. At the present time they are in restricted areas and their wider distribution is urged, so that they would be available as food in case of serious disasters affecting the food supplies of the inhabitants of Alaska.

Needs of the bureau.—Within the three years from July 1, 1910, to June 30, 1913, the work of the bureau has increased more than threefold, with an increase of only 20 per cent in appropriations. With the present appropriation and equipment the bureau can attempt to do only a small part of the work for which it was established and for which there is urgent demand. The Commissioner recommends that provisions be made for the following:

Necessary increases in salaries.

An assistant commissioner, who should also be a specialist in secondary education, and should serve as the chief of a high-school division of the bureau.

Additional specialists and clerks in higher education, including universities, colleges, schools of technology, schools of professional education, and normal schools, with particular emphasis on the need of a specialist to devote his entire time and attention to the colleges of agriculture and mechanic arts for negroes in the Southern States.

A considerable increase in the appropriation for the investigation of rural education, industrial education, and school hygiene, the present appropriation of \$15,000 being wholly inadequate for this purpose.

The investigation of city school administration and education in city schools, which work the bureau is at present able to do only in a most meager and unsatisfactory way.

The investigation of the education of exceptional children, for which there is an urgent demand, but for which the bureau has now no appropriation.

The investigation of the education of adult illiterates and the dissemination of information as to the best methods of reducing the large amount of illiteracy of adult population in all parts of the country.

The investigation of school and home gardening in cities and manufacturing towns, and for dissemination of information as to how this important form of industrial education may be promoted by the cooperation of the school and the home.

The investigation of home education and the dissemination of information as to the best methods of the early physical, mental, and normal education of children in the home and the cooperation of the home and school for the education of children of school age.

A specialist in educational theory and practice, to serve as a director of investigations in education, assisting National, State, and local committees and commissions and making available for them the large collection of material in the library of the bureau.

A librarian and an assistant editor, the first of which is needed for the better care and use of the bureau's large collection of books, pamphlets, and reports on education, and the second because of the large increase of work in the editorial department.

Two additional translators, and for a specialist and two assistants in foreign and domestic systems of education, all of which are needed to enable the bureau to keep the people of this country informed in regard to the significant progress in education in other countries.

Two additional collectors and compilers of statistics, to enable the bureau to obtain prompt and accurate information for its reports.

Necessary additional clerks, copyists, laborers, and messengers.

An increase in appropriation for traveling expenses for the Commissioner and employees acting under his direction, which is necessary to enable them to make first-hand investigations of educational conditions in different parts of the country and to disseminate information by meeting with educational associations and other societies interested in education in different parts of the country.

Cooperative investigation and experiment in secondary and elementary education to enable the bureau to carry on, with the help of expert educators, important investigations and definite experiments in education under scientific control.

An increase of \$400 in the appropriation for collecting statistics, etc., for which the present appropriation is inadequate.

The appropriation of \$125,000 to enable the Secretary of the Interior, in his discretion and under his direction, and with the advice and cooperation of the Public Health Service, to provide for the medical and sanitary relief of the Eskimos, Aleuts, Indians, and other natives of Alaska, for which there is an imperative demand and which is necessary not only to the life and health of the natives but for the welfare of the white settlers as well.

That the various lump-sum appropriations be made available for personal services in the District of Columbia and elsewhere, without which the best results can not be had from the expenditure of these funds.

GEOLOGICAL SURVEY.

The scientific work of the Geological Survey has been continued along lines similar to those followed in previous years and the usual number of contributions have been made to the knowledge of geology and related subjects. The appropriations for the work of the survey for the fiscal year 1913 aggregated \$1,479,920. During the last six years the field investigations and the attendant office work have shown a remarkable growth. Notwithstanding the fact that during that period the former technologic branch of the survey has been independently organized as the Bureau of Mines, the survey is larger now than six years ago. The personnel has increased more than one-third, the general correspondence more than two-fifths, and the distribution of reports and maps, including maps sold, practically one-fourth. The total cash receipts from sales of publications has increased three-fifths since 1907. Notwithstanding these gains in every particular there has been a net loss in annual appropriations. Because of the increasing pressure of work overtime service has become almost habitual in many of the divisions. Many of the scientists average at least 10 per cent overtime, while in certain groups of the clerical force overtime throughout the year averages from 5 to 7 per cent, and in some instances 20 per cent for a month at a time. A low average is also found in the record of annual leave taken, the amount for the year being 19 days, or scarcely two-thirds of the 30 days permissible. In connection with this matter of overtime work and what may be considered a maximum output, it is believed that the limit has been reached and that a crisis now faces the work carried on by this bureau. In other words, the activities imposed by Congress on the Geological Survey have been increasing faster than the appropriations provided therefor. In short, the organization is undermanned and underequipped; overtime work is evidence of enthusiastic loyalty to the public service, but the strain is cumulative and the organization requiring it is bound to suffer. The demand upon the survey for more work can not be checked, but the means to meet the demand can be provided.

A serious limitation upon economy in the administration of the Geological Survey appropriations results from the discordance between the fiscal year and the field season. The necessity of making field plans and starting field projects on July 1, when from two to three months of the natural field season have passed, involves not only great inconvenience but serious financial loss. Congress has in some measure relieved this unnatural situation by making certain of the appropriations for the field service wholly or in part immediately available. Yet even this plan fails to afford practical relief when,

as in the last two years, the appropriation act was not finally passed until late in the year. It is difficult to estimate closely the loss involved, but it is an actual money loss of large dimensions and represents a considerable proportion of the total appropriation.

Alaska Railroad Commission.—A special contribution was made by the survey to the work of the Alaska Railroad Commission, which was created by the Sixty-second Congress and charged with the investigation of transportation routes in Alaska. The commission consisted of five members, and the survey geologist in charge of investigation of mineral resources in Alaska was named in the statute as one of the five. Alfred H. Brooks was therefore designated by President Taft to serve as a member and was made vice chairman of the commission. Mr. Brooks visited Alaska with the other members of the commission, leaving Washington September 3 and returning December 1, 1912. The resulting report was submitted to the President and by him transmitted to Congress January 20, 1913.

Geologic surveys.—Investigations were continued in 45 States by a force of 140 geologists. More than 60 per cent of the appropriation was expended in the public-land States. Systematic detailed surveys of mining districts were continued in Alabama, California, Colorado, Georgia, Idaho, Missouri, Montana, Nevada, Tennessee, Utah, and Washington, and general and detailed geologic and paleontologic investigations were conducted in all parts of the country. A large amount of geologic work was done in the coal and oil fields of the public-land States, while the search for commercial deposits of potash on the public lands was continued.

Alaska surveys.—The appropriation for investigations in Alaska was not made until August 24, 1912, and was reduced from \$100,000 to \$90,000 with the result that the work was much curtailed, the average length of the field season for the year being only 53 days, as against 110 days in former years. However, 12 field parties were engaged in surveys and investigations during the year, covering 2,000 square miles by geologic reconnaissance surveys, 525 square miles by detailed geologic surveys, and 298 square miles by detailed topographic surveys. Investigations of water resources and of special field problems in the important mining districts were also carried on.

Statistics of mineral resources.—The work of the division of mineral resources included the preparation of the report on the mineral resources of the United States for the calendar year ended December 30, 1912. This report will complete the third decade of the work of this division, which was first authorized by Congress in 1882. The reports constituting the volume are printed as advance chapters throughout the year as soon as the data become available. On June 30, 1913, 33 of these chapters had been completed and trans-

mitted to the printer. These figures are compiled from individual reports received from over 60,000 operators and represent the output of between 75,000 and 100,000 mines, quarries, and wells. In the collection of these figures the following States cooperated with the survey: Alabama, Georgia, Iowa, Kansas, Maryland, Michigan, Missouri, New Jersey, North Carolina, Oklahoma, Oregon, Pennsylvania, Virginia, Washington, and Wisconsin.

The Mineral Resources volume, which is prepared under the direction of geologists who have specialized in the subjects treated by them, has come to be a yearbook of information concerning the mineral resources of the United States. Not only are the figures of production, past and present, given, but the Nation's reserve or future supply is discussed, accompanied by general maps showing the areas in the United States producing the precious, semiprecious, and baser metals and the nonmetallic minerals.

Topographic surveys.—The new area topographically mapped was 18,578 square miles, making the total area surveyed to date in the United States 1,178,974 square miles, or 38.9 per cent of the entire country. In addition, 3,987 square miles were resurveyed, making a total survey during the year of 22,565 square miles. Topographic surveys were also made in Hawaii to the extent of 153 square miles. The technical topographic field force numbered 156. In addition, 54 technical field assistants were employed during the whole or part of the field season.

Water resources.—The extent of the work possible with the survey's appropriation of \$150,000 for the investigations of water resources has been considerably broadened through cooperative funds made available by 14 States, the Territory of Hawaii, the Reclamation Service, and the Office of Indian Affairs. Stream-gaging stations were, at the close of the year, being maintained at 1,148 points, exclusive of Hawaii and Alaska. In addition, records were received from 240 stations maintained by private enterprise. A large amount of work was carried on in the public-land States in connection with the classification of the public lands, and investigations of underground and surface water conditions were made throughout the country. Seventy-three per cent of the appropriation was spent in the public-land States.

Land classification.—The work of land classification has increased with great rapidity. On May 1, 1912, the Land Classification Board was organized as a coordinate branch of the survey, and on July 1, 1913, the personnel of the board numbered 34, 10 of whom were geologists and engineers, 4 technical, and 20 clerical employees. The great volume of land-classification work which has been thrown on the survey has put the board considerably in arrears, despite the most strenuous efforts and a large amount of overtime work.

Publications.—The number of books distributed during the year was 375,213 and the number of maps and geologic folios 724,760, a total of 1,099,973. Of these, 538,245 maps were sold. The amount of money received and turned into the Treasury from the sale of publications was \$29,117.66, an increase of \$3,362.44 over the amount received in the fiscal year 1912. During the year 85 new topographic atlas sheets were engraved and printed by the survey's engraving division, and 12 State maps were photolithographed and printed, and 4 geologic folios were engraved and printed, the total editions aggregating 1,250,783 copies. A large amount of additional work was done on contract for other departments through the Government Printing Office.

Administrative branch.—The official mail showed an increase of little more than 5 per cent over that of the previous year. The total mail handled in the survey was 236,569 letters received and 304,670 sent. The roll of survey members holding secretarial appointments numbered at the close of the year 893, an increase of 13. The library received during the year 4,570 books and 970 maps.

RECLAMATION SERVICE.

The act of Congress approved June 17, 1902, known as the "Reclamation act," creates a fund for the reclamation of arid lands from the moneys received from the sale of public lands in certain of the Western States and Territories, excepting the 5 per cent of the proceeds of such sales set aside by law for educational and other purposes. The actual receipts from this source to June 30, 1912, were \$77,396,161.93, and the estimated total receipts to June 30, 1913, including \$247,007.41 from sale of townsite lots, are \$81,819,614.99. The net investment of this fund in reclamation works on June 30, 1913, amounted to \$76,233,056.95.

The act requires the Secretary of the Interior to determine, with a view to its return to the reclamation fund, the estimated cost of construction, and entrymen and private landowners receiving water from reclamation projects are therefore required to contribute their proportion of the cost of construction, operation, and maintenance of the project wherein their lands are situated. The cash receipts from this source to June 30, 1913, were: Building repayments, \$2,799,405.73, and operation and maintenance, \$1,381,184.61.

In addition, sales of water to towns and cities, leases of power developed on the projects, rentals or carrying charges for irrigation water, miscellaneous sales of old material, etc., have produced an additional return of \$6,032,440.51. Reimbursement for work done for the Indian Service amounts to \$1,987,497.34. Under the respective laws authorizing these transactions this amount is credited as a reduction of the cost of the projects.

No new projects have been undertaken since 1906, but prior to that date 25 primary projects had been undertaken, the net investment in which on June 30, 1913, amounted to \$75,174,283.26, as shown in the following table:

Net investment in reclamation projects to June 30, 1913.

State.	Project.	Net Investment.
Arizona.....	Salt River.....	\$9,883,321.41
Arizona-California.....	Yuma.....	6,210,894.01
California.....	Orland.....	570,653.44
Colorado.....	Grand Valley.....	451,931.11
Do.....	Uncompahgre.....	5,050,967.38
Idaho.....	Boise.....	8,155,463.02
Do.....	Minidoka.....	4,296,711.67
Kansas.....	Garden City.....	380,954.77
Montana.....	Huntley.....	962,344.23
Do.....	Milk River.....	1,631,076.89
Do.....	Sun River.....	1,013,072.87
Montana-North Dakota.....	Lower Yellowstone.....	3,070,947.86
Nebraska-Wyoming.....	North Platte.....	5,806,433.37
Nevada.....	Truckee-Carson.....	5,029,501.66
New Mexico.....	Carlsbad.....	732,910.61
Do.....	Hondo.....	358,913.60
New Mexico-Texas.....	Rio Grande.....	1,690,604.78
North Dakota.....	North Dakota pumping.....	911,205.97
Oregon.....	Umatilla.....	1,365,259.84
Oregon-California.....	Klamath.....	2,083,143.40
South Dakota.....	Belle Fourche.....	3,104,846.96
Utah.....	Strawberry Valley.....	2,271,131.13
Washington.....	Okanogan.....	582,653.33
Do.....	Yakima.....	5,731,143.14
Wyoming.....	Shoshone.....	3,828,086.81
Total primary projects.....		75,174,283.26
Secondary projects.....		592,412.23
Arizona-California, Colorado River.....		43,710.00
Oklahoma-Cimarron.....		11,723.99
Oregon, Central Oregon.....		40,366.67
Townsite development.....		16,916.04
General.....		39,272.27
Indian:		
Blackfeet, Montana, \$79,935.04; Flathead, Montana,		233,883.76
\$99,094.28; Fort Peck, Montana, \$54,854.44.		
Miscellaneous preliminary investigations.....		80,488.73
Total.....		76,233,056.95

Included in the above are the expenditures on investigation of various so-called secondary projects or enterprises which have not been found to be such as to warrant immediate undertaking. There are also in addition certain investments in town-site development, \$16,916.04; in Indian irrigation, reimbursable, \$233,883.76; and for general expenses, not distributed on June 30, 1913, \$39,272.27; making a total of \$290,022.07.

Every effort has been directed toward the completion of those projects or portions of projects where the most immediate results can be had in the way of irrigable area. There are numerous requests for the survey of secondary projects which must be denied primarily because of lack of money to undertake them even if they should be found worthy.

The following table contains a summary of the results of the work from the time of the passage of the act of June 17, 1902, to June 30, 1913: *

Summary of results to June 30, 1913.

Estimated area of all projects when completed	acres..	2, 983, 440
Area for which service is prepared to supply water	do....	1, 299, 956
Area under permanent water-right contracts	do....	431, 457
Area under temporary rental contracts, etc.....	do....	520, 815
Total area under contract for irrigation, 1913	do....	952, 272
Reservoir capacity.....	acre-feet..	5, 051, 210
Canals built:		
Capacity over 800 second-feet.....	miles..	313
Capacity 301 to 800 second-feet.....	do....	471
Capacity 50 to 300 second-feet.....	do....	1, 206
Canals and drainage ditches built, capacity less than 50 second-feet... do....		5, 971
		7, 961
Miles of tunnels built, 77; length, 117,760 feet	do....	22. 25
Storage and diversion dams built, volume 9,523,652 cubic yards.		
Dikes built, volume 3,697,228 cubic yards, 82 miles.		
Canal structures built costing—		
Over \$2,000.....		627
\$500 to \$2,000		1, 330
\$100 to \$500.....		9, 210
Less than \$100		39, 066
Total.....		50, 233
Bridges built: Number, 3,339; length, 70,900 feet.		
Buildings erected: Offices, 65; residences, 426; others, 407; total, 898.		
Roads: Miles constructed, 697; railroads built, 51 miles.		
Telephone lines: Miles constructed, 2,331; phones in use, 927.		
Transmission lines: Constructed, 351 miles.		
Material excavated: Class I, 87,492,753 cubic yards; Class II, 6,296,118; Class III, 5,456,897; total, 99,245,768.		
Riprap: 419,790 cubic yards; paving, 511,322 square yards.		
Cement used: 1,533,544 barrels; concrete in place, 1,344,908 cubic yards.		
Cement manufactured by United States: 338,452 barrels; sand cement manufactured, 95,435 barrels.		
Coal mined: 30,691 tons.		
Pipe laid: Concrete, 433,212 feet; tile, 181,339 feet; steel and iron, 32,287; wood, 184,149; total, 830,987=157 miles.		
Flumes built: Concrete, 3,039 feet; metal, 67,266; wood, 323,640 feet; total, 393,945 feet=74½ miles.		

The crop returns have been estimated, and the following table gives the information available concerning these.

Operation and maintenance results, 1909, 1910, 1911, and 1912.

	1909—20 projects.	1910—22 projects.	1911—23 projects.	1912—23 projects.
Area irrigated and cropped:				
Under water-right applications.....acres..	176,942	208,318	270,459	275,807
Under rental contracts, etc.....do.....	233,686	265,105	294,222	366,590
Total irrigated and cropped.....do.....	410,628	473,423	564,681	641,397
Total number acres irrigable.....do.....	730,601	917,761	1,015,494	1,193,374
Number of farms irrigated and cropped.....	9,503	11,676	13,708	16,554
Number of water-right applications.....	3,657	5,325	9,523	9,952
Number of miles of canals operated.....	2,993	3,945	4,853	5,744
Cost of operation and maintenance (exclusive of betterments):				
Total.....	\$936,433	\$981,966	\$1,058,238	\$1,096,206
Per acre.....	\$2.28	\$2.07	\$1.88	\$1.71
Value of crops:				
Total.....	\$11,920,663	\$12,974,639	\$13,121,224	\$14,479,368
Per acre.....	\$29.10	\$27.50	\$23.30	\$22.60
Population of farms.....	53,812	63,149	69,638	70,141
Quantity of water diverted to land:				
Acres-feet.....	1,523,638	1,635,696	2,079,033	1,991,949
Per acre.....	8.7	8.5	3.7	3.2

¹In addition 129,202 persons live in the cities and towns on the projects.

Reclamation of arid lands.—The construction of storage works for holding flood waters and bringing these to the arid lands has continued rapidly during the past year. There are now over 1,200,000 acres provided with water, and reservoirs and canals are under way which when completed will supply water to a total of about 3,000,000 acres. The problem of chief concern, however, is not that of providing water for the lands, but rather that of seeing to it that these irrigable lands are promptly made productive and useful in the extension of agriculture in the West.

When the reclamation or Newlands Act was under discussion and also during the early years of operation under the terms of the act, the assumption was made that the duty or task of the Government would be completed when the floods had been stored, and the waters made available in the main line canals. It was argued that the later settlers on arid lands should be put on the same basis as the pioneers, namely, that they should be able to find opportunities for building small irrigating canals and distributing systems to their lands. As these opportunities had then been nearly all taken up it was argued that the Government should provide water by building large reservoirs and main line canals from which the settlers could construct their smaller canals, as was done by their predecessors who built their water systems from the rivers and creeks which were then available to them.

This early conception, however, could not be carried out. It has been shown by experience when the Government had finished certain reservoirs and main line canals, that to utilize these works it would be necessary to go further than originally planned. It was found necessary to build the distribution system to the lands of the settlers.

Accordingly, this was done; vast sums of money have been expended in building these distributing systems and in acquiring existing canals which were found to be necessary in the development of a complete method of conveying water to the lands of each owner. In other words, instead of settlers being able and willing to receive water at points distant from these lands, it was found that the stored water would not be utilized in reclaiming the land unless this water was brought within half a mile or less of each farm unit. By so doing, the first cost of the work to the Government was notably increased, as it assumed the burden of providing a distributing system which otherwise would have fallen directly upon the settler in the early years when he was least able to assume such burden.

Even this expedient for securing early and complete use of the reclaimed lands has not brought about as complete development as was anticipated. Out of the 1,200,000 acres which have been provided with water at or near the land at a cost of approximately \$40 per acre, only a little over one-half was cropped during 1912. It is now urged by some that the Government should go even further in the way of providing facilities for utilizing this land. Some advocates urged that the reclaimed lands be leveled and plowed by the Government and made ready for the newcomer. There must be drawn, however, a sharp line between what is necessary in the reclamation of these lands and what may be desirable from the standpoint of the promoter.

Slow development of irrigated areas.—It must be admitted that the slowness of development and use of the reclaimed lands has been a source of disappointment. The cause of this, as above stated, was at first attributed to the fact that newcomers were unable to provide the distributing system for bringing water to lands. Under such assumption as just noted large expenditures were made in overcoming this obstacle. It has been found, however, that this was not the real or greatest obstacle to progress. It lies far deeper, being inherent in human nature, and is a cause of delay whose magnitude up to the present time has not been fully appreciated. This obstacle is the spirit of speculation aroused by the opportunities offered through the reclamation of arid lands whether by public or private capital.

Speculative features.—There are throughout the western half of the United States millions of acres of desert land, which without water has little, if any, value. With water and full development the land is capable under good agricultural management of producing crops which will pay a good interest on an investment of several hundred dollars per acre. Under pioneer conditions men of energy and vision were attracted by this cheap land, built small irrigation canals from the nearest streams, and by individual or collective effort made for themselves homes and farms which ultimately became salable at

large prices. It has been argued that if this could be done by the unaided efforts of the pioneers, how much more could be accomplished by the use of ample capital, and consequently what large profits might be expected, if, with the expenditure of \$50 per acre, lands worth only \$1.25 could be made to have a value of \$500 per acre.

The prospective profits to be derived from the reclamation of otherwise worthless lands by the storage of waste waters have been among the most alluring of inducements to the investor. The results already attained show, however, that there has been no one class of investments which has uniformly been so unprofitable. Few, if any, of these investments have ever returned to the eastern or European shareholder or bondholder the amount of his original expenditure.

The fallacy lies in this, that the success of the enterprise depends upon the prompt and successful development of agriculture within the reclaimed area. This agricultural development has rarely followed the construction of the works. In all plans for reclamation the assumption has been that when the water was available there would be not merely an immediate increase in land prices, but these lands will be readily taken by competent farmers who would at once begin to produce crops, by the sale of which the money invested could be repaid.

In all cases, however, there has been very slow return. Although the lands have been advanced rapidly in price, this advance has been based upon the hopes of future productivity rather than upon actual crop returns. The spirit of speculation has been aroused by these rapid advances. The phantom of unearned profits in selling the land has obscured the clear vision of the actual profits to be had from the cultivation of the soil. Thus, under the Government works, as well as under those built by corporate capital, the same problem is being encountered—that of securing the actual use of the land and restraining the speculative tendencies.

Obstacles to development.—The slowness of development of irrigated lands arises from lack of experience and of capital on the part of the individual settler; the experience can be acquired only through lapse of time and through the study of existing conditions.

The lack of capital may be overcome in part at least in different ways, primarily by efforts to cut down the need of or demand for ready money. In studying the financial conditions of the settlers the most striking feature is the heavy loads which many men are endeavoring to carry because of the excessive amount which they have agreed to pay for irrigated lands. The Government has advanced without interest charge the capital required to bring water to these lands at a cost of upwards of \$40 per acre. In the past it has been assumed that this is all or even more than the Government should do. If the man who is now owning the land had to pay only

for the cost of the water his financial condition would be excellent, but, as before stated, the present landowner is often not the original entryman, nor even the purchaser from the man who obtained it from the Government. There have been numerous transfers, each usually at an advance in price, and the man now tilling the soil is trying to pay the profit which has been made in each of these successive transfers.

In some cases the prices have been forced up from the original or true value of the land without water, which has been \$5 per acre, up to \$100 or even \$200 per acre. More than this, the interest charge on deferred payments, which naturally results from such speculative prices is 8, 10, or even 12 per cent per annum. It is needless to state that no agricultural lands during the years of development can pay an interest charge of this amount and at the same time yield a profit to the owner.

It is this condition which, more than any other, is holding back the development of the arid West, viz, that the present landowners are loaded with debt incurred in obtaining the land. The bounty of the Government in providing water for these lands at cost and without interest has resulted not in benefiting the present occupant of the land but in creating a speculative spirit which has loaded the present cultivator with debt to the very limit of his capacity. The prices of raw land must come back to the true value of the land in its original condition, plus the amount paid for bringing water to it. Any notable amount above the actual cost of the water is little short of robbery of the cultivator of the soil. It is unwise to continue to bring land under irrigation until this condition is recognized and the remedy applied.

One of the solutions offered for this condition is, as might be expected, that the Government not merely reclaim the lands but arrange to loan money to the farmer at low percentage for development of the land. Such a scheme would be but adding fuel to the flames of speculation.

How to promote development.—The problem of how to insure development of the reclaimed lands is one of the most serious which has been presented. It is that of how to induce or make it possible for the farmer to devote his energies to the raising of the most profitable crops and to market these crops to the best advantage to himself. Theoretically, it should be easy to convince a man in matters which affect his personal interest. Practically, it is difficult to convince the farmer from the East that certain crops upon which he places great reliance are not those best adapted to irrigation. To get an entire community to work in such manner as will enable the production of the kind of crops which can be marketed to the best advantage is a matter requiring great skill and tact.

Usually, during the first two or three years each man experiments according to his own ideas. The crop returns are relatively small and the values large. Then comes a third or fourth year when nearly everyone has had large yield, the total being in excess for the demands of the local markets. Then crop prices drop as they did in 1912 throughout the irrigated West, to a point where thousands of tons of potatoes were not dug, or were allowed to rot in the pits, and where tens of thousands of tons of alfalfa were held over because there was no market and no cattle available to consume it.

Cooperation with the Department of Agriculture has been sought in this regard. Experiment stations have been established on five of the projects where ultimately there will be worked out many of the problems of crop production and the preservation of irrigated lands from deterioration. Meantime, however, the thousands of newcomers must trust very largely to their own initiative or copy from each other.

Irrigated land prices.—In looking back over the history of irrigation development there are apparent two conspicuous obstacles to development, both arising from the defects of human nature—first, the desire of the cultivator to obtain and hold more land than he can well utilize or pay for, and, second, the attempt of every landowner to boost the prices of unimproved land on the basis of what it will ultimately produce when improved. The one evil is the natural outgrowth of the other. Large landholding tends to create a monopoly and monopoly encourages high prices with resulting stagnation in actual use.

What is estimated cost.—One of the questions which has recently been brought up with considerable emphasis is as to what is estimated cost, as mentioned in the reclamation act of June 17, 1902, and how this is to be determined. This question was evidently carefully considered and determination reached by former Secretaries of the Interior that the estimated cost should be determined by formal action of the Secretary after the contracts for the construction of the project had been let or equivalent work completed to a point where the cost could be estimated on the basis of actual contract or other work performed.

There has recently arisen a contention, however, that the Government is bound by certain alleged estimates of cost made prior to the formal letting of contracts for the project and beginning of construction. It is asserted that before construction was begun certain statements were made by engineers or other employees of the Government in the field to the effect that the completed project would cost from \$20 to \$25 per acre; also that water users' associations were formed, land subscribed, and contracts entered into on the basis of these assumptions, and that later on, after the contracts were

let and the work well in hand, it was ascertained that the estimated cost, based on these contracts and on the experience then had, would be greater than that alleged to have been stated at first.

The early records of the department show that while many alternative estimates were prepared and assumptions made as to probable cost, none of these were officially accepted by the Secretary of the Interior or promulgated by him as the formal estimates of cost.

As conditions have developed, the Government has been called upon to build not only more expensive structures than at first anticipated, but more of them. For example, where under a private project an occasional bridge across a canal suffices for public needs, under the Government works, with the higher demand for facilities, two or three bridges must be built, and so on. In other words, under construction by the Government, far more is demanded than from a corporation which goes into this work for the purpose of making money, and a degree of stability is requisite which up to recent times has not been found necessary in other parts of the arid region.

Largely because of the more complete construction involved, as well as the increase in cost of units of the work, the total estimated cost per acre is largely in excess of that at first assumed. This increase of cost is also due to the fact that it is distributed over smaller acreage. For example, taking a 160-acre tract under the ordinary canal, the cost is distributed over each acre. Under a Government canal, however, much of the poorer land is eliminated, and instead of charging the owner for water for the entire 160 acres, he may be called upon to pay for water for only 135 acres, with corresponding increase in the acreage cost of the lands actually irrigated.

When the works were initiated, and at the present time in localities where there are demands for additional works, the people of the locality are more insistent upon the benefit of irrigation and upon the value of the land and the possibility of paying for the water. It is a common statement that the lands to be irrigated will easily stand \$50 or \$60 per acre and that the entrymen would rather pay \$100 per acre than not get the water. At such time, there has been very little attention paid to the probable cost, but, as experience now shows, after the works are completed, and the people are called upon to pay the bill, then comes a loud outcry that they were induced to go into the project by promises of cheap water.

A general review of the whole condition of irrigation development, whether by the use of public or corporate funds, leads to the conclusion that for the present the maximum energies should be given to these matters: First, of safeguarding land prices, trying to prevent their inflation; second, of bringing to the attention of competent

farmers the opportunities of securing land at reasonable prices; third, of indirectly assisting in the best cultivation of the land by the diffusion of information concerning methods of irrigation and cultivation.

Transfer of control of projects to water users' associations.—Section 6 of the reclamation act of June 17, 1902, provides that—

When the payments required by this act are made for the major portion of the lands irrigated from the waters of any of the works herein provided for, then the management and operation of such irrigation works shall pass to the owners of the lands irrigated thereby, to be maintained at their expense under such form of organization and under such rules and regulations as may be acceptable to the Secretary of the Interior.

The question of turning over the operation and management of the works to the water users' associations has been agitated during the past upon practically all of the projects, and at the conference of water users with the Secretary of the Interior in May, 1913, the question was again brought prominently forward, culminating in the following suggestions by the National Federation of Water Users' Associations:

That upon the request of any association, it be given as full control and management of the distribution of water and maintenance of laterals and canals as the law will permit and as may be practicable.

That the Secretary of the Interior approve and recommend such legislation as will permit the turning over to the various water users' associations the full control, operation, and maintenance of the irrigation systems at the earliest practicable date.

The time contemplated in the act for such transfer of control has not yet arrived on any of the projects, but preliminary negotiations have been entered into with three projects to determine whether arrangements could be made whereby the water users' associations might in the meantime act as the agents of the Secretary in operating the projects, and also to determine whether the wishes of the majority of the water users were in accord with those expressed by their representatives at the conference in May and at previous times.

Salt River Valley project.—In an attempt to comply with the request of the representatives of the water users' association, the Secretary wrote the association on June 21, as follows:

In accordance with the request made by you when in attendance at the conference in Washington May 1 to 17, to the effect that arrangements be entered into with your association to operate the irrigation system, I see no objection provided your association is willing to assume the obligations which rest upon the Government.

As a necessary preliminary to considering such an arrangement, it is essential that there be a clearly expressed desire on the part of at least two-thirds of the stockholders representing two-thirds of the irrigable acreage that the Government turn over to the association the operation and maintenance of the system, and that the stockholders as a body are willing to assume the obligations incident to such management by them, guaranteeing the effective protection and use of the works and the carrying out of all understandings or agreements incident to control of this character.

The reclamation act of June 17, 1902, contemplates in section 6 that when the payments required by the act are made for the major portion of the lands, then the man-

agement and operation shall pass to the owners of the lands, to be maintained at their expense.

The time contemplated in this act has not yet arrived, and therefore it is impossible to make the final arrangements contemplated in the act, but prior to the time when payments have been made for the major portion of the lands, it may be practicable for your association, acting as agent of the Secretary of the Interior, to carry on the operation which otherwise must be handled by him. It is with this view of the matter, viz, that the association acts as the agent of the Secretary of the Interior, that I will endeavor to meet the desires expressed by you.

Assuming that two-thirds of the stockholders representing two-thirds of the acreage desire the association to act in this capacity, it will be necessary in the preliminary agreement to decide upon the following points:

First. The definite acreage and location of lands to be included in the project.

Second. The levying upon each and every irrigable acre thus designated of a uniform operation and maintenance charge to be paid each year, whether water is used or not, and an additional charge per acre-foot for water used in excess of 2 acre-feet per acre.

Third. The lateral system to be extended to each farm unit within the designated area.

Fourth. The system of wells and pumps to be completed with a view to irrigating the maximum acreage.

The above items are among the most important to be considered in any preliminary agreement. There are doubtless other details which will occur to both of us during the course of the negotiation. This letter is sent to you to indicate my desire to meet the wishes of your people as far as practicable, and to enable you to discuss the matter at length with your stockholders.

This letter was given wide publicity in the Salt River Valley, and at a special election held on July 8 a vote was taken on the question of taking over the operation and maintenance of the system at the present time, with the following result:

	Individ- uals.	Acreage repre- sented.
Registered and entitled to vote.....	3,515	160,596
Voting.....	358	27,490
Voting in favor.....	252	19,822

Analysis of the vote shows that of the total number of landholders entitled to vote only 10 per cent, representing 17 per cent of the total acreage, actually voted. Of the total number of landholders entitled to vote 7 per cent, representing 12 per cent of the total acreage, voted in favor of the proposition.

Klamath project.—On June 9, 1913, the following resolution was adopted by the board of directors of the Klamath Water Users' Association:

Whereas the stockholders of the said association in an annual meeting of said stockholders held in the city of Klamath Falls, State of Oregon, on the 6th day of June, 1913, instructed the board of directors of said association to undertake the maintenance and operation of the first unit of the Klamath project: Therefore be it hereby

Resolved by the board of directors of said association in regular meeting, That the honorable Secretary of the Interior permit this association to undertake the maintenance and operation of the first unit of the Klamath project under such form of contract and agreement as shall, to the Secretary of the Interior, appear to be essential for the mutual protection of the stockholders of this association and the reclamation fund under the reclamation act.

It was suggested by the board of directors that the adoption of the plan should depend upon its indorsement by a three-fourths majority of the settlers on the project. In addition, the following essentials in connection with the carrying out of the plan were freely discussed by representatives of the Reclamation Service with the members of the board of directors and a mutual understanding reached; the points being taken up with the full board item by item and being agreed to by them in detail:

1. The service to prepare a circular letter outlining conditions under which the association may, under contract with the United States, assume operation of the first unit. This circular to be submitted by the service to each shareholder, and in the event of a majority of three-fourths of the shareholders favoring the plan, to put it into effect.

2. The association to complete proper field organization prior to next irrigation season at date to be agreed upon.

3. The man to be placed in charge of operation to be of recognized ability and experience in operating and maintaining an irrigation system.

4. All employees to be directly engaged and paid by the association.

5. All works to be maintained in good order.

6. Water to be distributed according to the schedule prepared by the association and approved by the service.

7. Proper records and water measurements to be kept up.

8. Drainage work to be continued by the association according to the schedule approved by the Reclamation Service.

9. Operation and upkeep of the works to be subject to inspection by the service. In event of failure to properly maintain or operate the system, the service to reserve the right to immediately intervene either by cancellation of agreement or by performing necessary work, charging cost to association.

10. All charges due the United States on account of building the system to be paid the United States by the association on or before a fixed date annually, whether collected or not.

11. Security to be given by the association for proper upkeep of the system, including all fire and water risks; also salaries of employees and the payment of the building charges to the United States.

In pursuance of this conference, a circular letter under date of July 11 was sent to each water user on the first unit of the project. This letter included a statement regarding the operation of the first unit by the Reclamation Service during the past four years; gave a list of the requirements, practically the same as those indicated above and which were mutually agreed upon, to be included in a contract with the Secretary prior to turning over the operation of the unit to the water users, and inclosed a ballot to be filled in,

expressing the desire of each voter, and forwarded to the project engineer by August 10, 1913.

An active campaign was conducted by the president of the Water Users' Association in favor of transferring the operation of the project to the association. When it appeared, however, that many of the stockholders would not vote, stating that their failure to vote would be understood to mean that they approved continued operation by the Reclamation Service, the directors of the association circulated a form letter addressed to the Secretary, to be signed by the stockholders. After reviewing the action of the board of directors in requesting that the operation of the first unit be turned over to the association, and calling attention to the circular letter of July 11 containing the ballot, this form letter continues as follows:

In said circular letter there was a lengthy list of provisions which the said service evidently proposes to require as a condition precedent to turning over the project to the Water Users' Association for management. Of the advisability or legal significance of these many requirements I am not advised and by resolution heretofore adopted the matter of arrangement of terms, etc., upon which the management could be turned over to the Water Users' Association was left to the board of directors. The terms as set forth in the said circular letter appear to be the labor of the reclamation officials solely and our board has had no part in any negotiations as we have authorized them so to do.

I am in favor of the management of the operation and maintenance of the first unit of the Klamath project by the Water Users' Association, provided terms can be agreed upon which will insure justice to both ourselves and the reclamation fund. I am not, however, in favor of any attempt on the part of the Reclamation Service to place the water user in a position where he can not vote for a proposition which he believes is for his own interest and the good of the project, as is evidently the intention of the said circular letter. Whenever the board of directors submits to me the terms of a contract or agreement fully considered by both the board of directors and the Reclamation Service and agreed upon by both as fair to both parties, I will then place myself upon record in this matter of future management of the first unit of the Klamath project.

Although it is probable that this form letter induced certain of the stockholders not to vote, an analysis of the actual vote as received at the project office is interesting. Of the 329 persons receiving the circular letter and ballot, returns were received from 105. Of these, 42, or 40 per cent, were in favor of the Water Users' Association taking over the operation and maintenance of the first unit, while 63, or 60 per cent, voted against the proposition. It should be noted, however, that the 42 voting in favor of the transfer represent only 13 per cent of the total number receiving the circular, while the 224 votes not returned should, in accordance with the terms of the circular letter, be counted as favoring continued operation by the Reclamation Service. In other words, only 13 per cent of the eligible voters were in favor of the operation and maintenance of the work.

by the Water Users' Association, while 87 per cent, either directly or by inference, voted for continued operation by the Reclamation Service.

No further action has as yet been taken either by the board of directors or the Reclamation Service.

Sunnyside unit, Yakima project.—Prior to the conference with the Secretary in May the desire to take over the control of the Sunnyside unit at the present time was freely expressed by the trustees of the Sunnyside Water Users' Association. In July, however, when the matter was discussed with them by Mr. C. H. Swigart, supervising engineer of the Reclamation Service, they stated that, as a result of the conference, they realized more fully than before the responsibilities which would attach to them if they took over the operation of the unit, and were not sure that they were ready to undertake the task at the present time. They are, however, working toward this end, and are trying to fit their organization for the responsibility.

The question of operating the project by the water users has never been formally voted on by the stockholders of the association, but there is talk of bringing the matter up at the annual meeting in December. However, the trustees appear to favor a change in the form of organization, from the Water Users' Association to an irrigation district, but believe that the State law should be amended in some particulars before such action is taken, and it is therefore possible that the matter will be deferred until the desired amendments are passed.

Drainage.—Drainage is a necessary accompaniment of irrigation and bears to it a similar relation to that of the provision of a sewage system in a town where a public water supply has been provided. The need of drainage is not always as immediately noticeable in an irrigated tract as is a sewage system in a city. In fact, most of the smaller irrigation systems have been built without reference to drainage, and where these provide water for lands which extend in narrow strips along natural drainage channels there is often no need of providing artificial drainage. Also, under conditions where the water supply is limited and there is occasional water shortage, the need of drainage is less felt.

Under large systems of water storage the furnishing of an adequate supply to tens of thousands of acres of land in compact bodies inevitably results in that much of the lower land receives an excess of water by seepage or percolation from the higher areas. There is a tendency at first to apply too much water even under the most carefully enforced rules. This waste continues until the entire community becomes aroused as to the dangers and losses from the use of too much water. After 10 or 20 per cent of the good agricultural lands have been thus injured the necessity of more careful use of

water is appreciated, and at the same time there results a demand for the construction of a thorough system of drainage.

Under the terms of the reclamation act, as originally understood, it was assumed that the duties of the Government would cease after it had provided the water in the reservoirs and main-line canals. It was believed that the communities would not only distribute the water to the individual farms, but would provide drainage systems as needed by the formation of drainage districts under State laws. This has been done in many instances. In others, however, the conditions have been such that it has been necessary to install drainage works of considerable magnitude to maintain the irrigability of the land; the cost of this drainage has been included in the original cost of building of the irrigation works; or, if the cost per acre for water has been announced, the cost of the drainage has been included with that of the annual charge of operation and maintenance.

There is a tendency in all of these matters to go from one extreme to another, and in this particular case from an almost entire neglect of the subject to the other extreme of large expenditures to reclaim land at an excessive cost. For example, under conditions where men have taken up irrigated farms, have made improvements, have raised good crops, and then the lands have been ruined, through no fault of their own, the tendency is to urge a costly drainage system to restore these lands. It would be desirable under these circumstances to have some alternative, namely, to permit the owner of the seeped lands to select other public lands which may be available and which are not as liable to be again seeped, definitely abandoning the area and its improvements rather than attempting to build and maintain costly drains. It is hoped that Congress will take favorable action upon the proposition permitting exchanges of this kind by which the unfortunate owners of seeped land may have another opportunity to establish a home.

BUREAU OF MINES.

The new organic act for the Bureau of Mines, passed by Congress within the fiscal year and approved February 25, 1913, has greatly extended the scope of the work of the bureau and made it more nearly commensurate with the importance of the mining and metallurgical industries of the country. Under this new organic act the work includes not only investigations and inquiries looking to the prevention of mine accidents, but also improvements in the general health and safety conditions, the practical conservation of resources through the prevention of waste, the increase of efficiency and economy, and improvements in the economic conditions relative to the mining, metallurgical, and miscellaneous mineral industries of the country. The work of the bureau during the current year was planned and

conducted in accordance with the appropriations made under the more restricted terms of the organic act creating the bureau, approved May 16, 1910.

Mine safety.—The two chief features of the work of the bureau during the year relate to mine explosions and the prevention of unnecessary waste in the mining and metallurgical industries. The investigations into the causes and the methods of preventing mine explosions have been carried on in the laboratories at Pittsburgh and, as far as circumstances permitted, in the experimental coal mine opened up 10 miles south of that city. Careful examinations have been made into the nature, extent, and the cause of each of the coal-mine explosions occurring in the country during the year, and these examinations have been supplemented by researches in the laboratories at Pittsburgh and in the experimental coal mine. In that mine the investigations have related mainly to the extent to which coal-dust explosions may be prevented through the introduction of moisture in different forms (steam, water sprays, etc.) or stone dust. Meanwhile other investigations have been conducted into the character of the explosives used in coal mining, with a view to determining what modifications can be made in the manufacture of explosives with a view to reducing the accidents; and in electricity to determine the nature of the electric installation best adapted to lessen the danger of mine explosions or the risk of electric shock to individual miners traveling through a mine.

The six mine-rescue stations have been maintained and the eight mine-rescue cars have been operated by the bureau during the autumn and winter seasons and 6,900 miners have been trained in first-aid and mine-rescue work. Thirty-two thousand eight hundred miners attended first-aid and rescue demonstrations given by the employees of the bureau in connection with the work of these cars.

The bureau has also collected information about such mining laws relating to health and safety as are in force in different countries, besides a large amount of data concerning the accidents and health conditions in the metal-mining and metallurgical plants of this country. These data show clearly that the loss of life, in proportion to the number of men employed, is larger in the metal-mining than it is in the coal-mining operations of the country.

Lessening the waste of resources.—During this year Congress authorized, for the first time, inquiries and investigations concerning the waste of resources in the mining and metallurgical operations of the country. The inquiries made under this authorization have extended to all the more important branches of the industry; they have shown that there are wastes in the mining and extraction of coal, oil, natural gas, copper, lead, zinc, and other mineral substances which constitute a serious, and in many cases a permanent, national loss

which should be prevented as rapidly as conditions will permit. The investigations have necessarily been limited to a few specific cases, such as the waste in lead and zinc operations, in copper smelting, in the oil and natural gas industries, and in rarer metals, such as radium, vanadium, etc. In connection with each of these extensive waste has been found that in many cases is believed to be, and in some cases has been shown to be, largely preventable, even under existing economic conditions.

Some benefits resulting from the bureau's work.—First in importance among these benefits is the reduction in the loss of life. The investigations have been confined largely to mine explosions. During the year previous to the beginning of these investigations (1907) 30 per cent of the coal-mine fatalities were caused by mine explosions; during the past year this percentage has been reduced to about 13. During the year before the beginning of this work the number of men killed per each 10,000 employed was 48; during 1912 it was 32. If the increasing death rate in coal mines of the country for the few years preceding the beginning of this work had continued during the few years since that date, the result would have been nearly 4,000 fatal accidents in excess of the figures actually recorded; and while it is not claimed that the work of the Bureau of Mines has been the sole cause of this reduction, its investigations and its educational work have undoubtedly been the leading factor in bringing about this improvement. Important agencies have doubtless been the introduction by the bureau of a new type of explosives for use in coal mines, improvements in electric and other mine installations, and the bringing about of a better cooperation between the miners and the mine owners in behalf of greater safety. The bureau has also done much to bring about the general introduction by the larger coal companies of appliances and methods for carrying on rescue and first-aid work after mine accidents.

The work of the bureau in connection with prevention of waste has been under way too short a time to render possible large accomplishments in this direction, but in a single State—Oklahoma—its work has been instrumental during the current year in stopping the waste of natural gas to the extent of more than 150,000,000 cubic feet of gas per day, which, at 25 cents per 1,000 cubic feet, would have a value to the public of more than \$13,600,000, an amount six times as large as the total cost of the Bureau of Mines from the time of its establishment. The work of the bureau in connection with oil and gas should be extended without delay to other parts of the country, as the gas now being wasted unnecessarily in the different oil fields has a value to the Nation of probably more than \$50,000,000 a year.

The investigations of the bureau in relation to wastes in the zinc and copper industries are already leading to the introduction of im-

proved methods which will ultimately bring about the prevention of extensive wastes.

Benefits resulting from the work of the bureau in line of increased efficiency are less tangible and less often reported, but are nevertheless important. In a single case, where one of the larger mining companies adopted a recommendation from the bureau relative to the use of explosives, the company reports not only a reduction in accidents, but also an increase in efficiency which saves at one large mine not less than \$80,000 per annum.

Needs of the bureau.—The benefits of the work of the Bureau of Mines are less important and less apparent than they might be, not only because of the shortness of the time since the work began, but also because the new bureau has never had either buildings, equipment, or other facilities adequate to meet the reasonable demands made upon it—demands that have been the more urgent because they related largely to the saving of life. Not only has the bureau lost influence, but the Government itself has lost good will among the miners of the country because of the fact that this agency of the Government has been unable to do properly or to a sufficient extent the work that the miners had asked that it be established to do.

During the year, however, Congress has secured for the bureau, through an exchange of lands, adequate grounds for its mining investigations at Pittsburgh. Congress has also authorized, though it has not yet made, the necessary appropriation for suitable laboratory buildings on this ground. It is hoped that this appropriation can be made at an early date, as the buildings and suitable equipment for them are greatly needed.

There is also need for an entire new outfit of mine-rescue equipment to supplement, and in large part to replace, the mine-rescue equipment that has been in almost continuous use during the past three years.

The work of the bureau has thus far, by force of circumstances, been limited largely to an investigation of explosions in coal mines. There are, however, other and larger causes of accidents in coal mines and in metal mines and other branches of the mineral industry, which employs a total of more than 1,500,000 men, and there are in these branches of the industry conditions which are injurious to health and which yearly cause large loss of life. The work of the bureau should be extended to include all of these.

The waste of natural resources in the mining and metallurgical industries of the country also presents an urgent need for extending these investigations. The results accomplished during the present year give promise of still larger results hereafter, even without the enactment of drastic legislation; but to accomplish these results it will be necessary that the facilities and the technical personnel of

the bureau be further enlarged. In this connection it should be remembered that the Nation has only one supply of mineral resources, which can not be replaced, and that the loss through waste is in many cases not only a real but a permanent loss to the Nation.

TERRITORIES.

Since the transfer under Executive order of July 15, 1909, of the supervision of affairs in Porto Rico to the Insular Bureau of the War Department, the former Territories of New Mexico and Arizona have been admitted as States, and there now remains under this department the supervision of but two Territories, Alaska and Hawaii.

ALASKA.

The report of the governor affords ample evidence for the statement that Alaska is about to enter upon an era of unparalleled development, industrially and commercially. The gold placer fields of interior and northwestern Alaska no longer give employment to as many men as in former years, but the gold output is still large; more power dredges are being installed from year to year and alluvial gold deposits carrying smaller values are worked profitably. In the placer regions, too, considerable attention is being given to quartz prospecting and mining with encouraging results. The volume of labor employed in the placer sections has decreased because of the adoption of new methods of mining in those districts and the exhaustion of placer deposits, but elsewhere an increase is noted, the white population at the present time being estimated at 36,000. The number of white males of voting age according to the decennial census of 1910 was 28,030, or 76 per cent of all males of voting age. In 1900 the corresponding percentage was 68.4. In 1910 the total number of people in the Territory, both white, native, and mixed, was 64,356.

The volume of merchandise shipments, including precious metals and copper, between Alaska and the United States and between the Territory and foreign countries in the fiscal year 1913 was the largest in its history. It exceeded the total of 1912 by \$3,028,013, the grand total for the year being \$67,150,519, as against \$64,122,506 in 1912. The greatest increase noted in the shipments from Alaska was in salmon, where there was an increase of \$2,875,791. Decreases in the shipment of gold and copper are more than balanced by the increase in other items. The merchandise shipments to Alaska from the United States amounted to \$20,179,547, as against \$18,809,270 in the fiscal year 1912.

Lack of transportation facilities continues to operate against the development of the Territory, and a comprehensive system of rail-

roads is something indispensable if the country is to be developed along enduring lines. Supplementary to the railroads, there should be largely increased appropriations by Congress for the construction and maintenance of roads and trails as feeders to the railroads and producers of additional tonnage for transportation.

Agricultural capabilities.—The agricultural possibilities of the Territory are beginning to be known in part and appreciated in part, and farming has now reached a stage that insures it a permanent place in Alaska's industries. The work done at the agricultural experiment stations at Sitka, Rampart, and Fairbanks has amply demonstrated the wisdom of establishing these stations. The reclaiming and cultivating of land has been greatly stimulated through the agency of the Government experimental stations. There has been, however, but a small increase of farmers during the past year, due to economic conditions which are such that there is no inducement to practical farmers in the States and elsewhere to settle in Alaska and engage in farming. Lack of available markets and transportation facilities are also prime factors which operate against successful farming in Alaska. In the Tanana Valley, however, there are a few farms which find a ready market for their produce in the town of Fairbanks and other mining camps of that section. Cattle breeding is carried on at Kodiak Island experiment station where there is a herd of about 100 head of various ages. The surplus of this herd is sold to Alaska settlers at reasonable prices for breeding purposes in order to stock the country with a breed suitable to the climate. It is also planned to develop dairy qualities in this breed of cattle, so as to produce a hardy all-purpose cow, which the country needs. The dairy work has been held in abeyance temporarily because of the removal of the herd necessitated by the volcanic eruption of 1912, which covered a considerable portion of Kodiak Island with ashes and destroyed the grass. There are at this station also about 100 head of large long-wooled sheep, which have been bred in Alaska and are inured to the climate. These are being bred with a view to supplying the country with a suitable breed of sheep.

Alaska has two climatic belts, known, respectively, as the coast region and the interior. The coast region is rainy, has mild winters and cool summers. The interior region is, for the most part, dry, has severe winters and short but warm summers. The coast region is rocky and has but few valleys that are suitable for agriculture. Vegetables of hardy kinds can be grown in the coast sections, but grain growing can not be said to be a success. Southeastern Alaska is practically only adapted to gardening, and southwestern Alaska is preeminently adapted to gardening and stock raising. The interior region differs totally from the coast belt not only in climate but in products and agricultural capacity. While the summers are short, about 90 to 100 days free from killing frosts, the weather is warm

enough to mature all the hardy grains. Spring wheat and spring rye, on the other hand, mature but seldom; hardy vegetables of all kinds are grown in the interior with equal or possibly even greater success than in the coast country. The country including the region of the Kuskokwim and Nushagak Valleys is intermediate between the coast region and the interior. The summers are cool, like the coast belt, and the winters are not so severe as in the interior. Oats and barley can be matured in the Kuskokwim and Nushagak River valleys, but conditions are not so favorable as in the Tanana Valley in interior Alaska, and the feeding season is longer than in the coast region.

National forests.—Fewer complaints are to be noted in the past year as to the administration of the national forest reservations, which embrace a very large percentage of the more heavily timbered areas of Alaska, due to the more liberal spirit that has been manifested in the interpretation of the regulations and the knowledge that the national forest-reservation system has become a fixed policy of the Government. The total receipts of the Tongass and Chugach National Forests for the fiscal year ended June 30, 1913, were \$52,460.55 as compared with \$53,218.41 in the previous year. The total allotment for the management of these national forests for the fiscal year 1913 was \$36,745.79. The number of areas surveyed and platted for occupancy permits during the year was 120. The number of permits granted during the year for whaling stations, canneries, salteries, cold-storage plants, mild-cured salmon stations, stores, dwelling houses, power sites, flumes, etc., was 208; the number of such permits now in force is 332. The number of homesteads surveyed and reported for listing under the act of June 11, 1906, which provides for the entry of agricultural lands within national forests was 16, and 20 mineral claims were examined and reported upon. The total number of timber sales made during the year was 267. The total amount of timber cut and scaled in the Tongass and Chugach National Forests during the fiscal year was 33,534,806 board feet, as compared with 44,647,410 board feet the previous year. Persons living on or near the national forests are permitted to take wood for domestic purposes free of charge. Timber needed by prospectors and miners in the development of their holdings is also given without payment.

Sealing.—The total fur shipments from Alaska in 1912 aggregated \$794,156.63, as compared with \$802,750 in 1911. Sealing operations in the Pribilof Islands are under the direct control of the fur-seal agents of the Bureau of Fisheries. An actual census of the herd made in 1912 showed that there were 215,940 seals of all classes in the herd; 3,764 skins were sold at auction in London in January, 1913, the proceeds of the sale being \$130,640.57.

Fisheries and reindeer industry.—The reindeer industry, established by the Government in 1892 has increased to a point where there is now an annual surplus available for slaughter, but with the exception of a few herds in the immediate vicinities of the towns there is no market for the meat. The herds are increasing rapidly. At the close of the fiscal year 1912 the whole number of reindeer was 38,476, distributed among 54 herds, of which 24,068, or 62.5 per cent, were owned by natives.

The fisheries output is second only to the production of gold and other metals, and its importance to the country generally, and particularly the salmon fisheries, serves to emphasize the vital need of supplementary legislation to conserve and at the same time develop the industry to the end that the supply of available food fishes may not be depleted by mere exploiters for their personal gain. Such restrictions as appear necessary to conserve the supply of fish would seem to be an elementary requirement of proper supervision and control by the Government. The relation of gear used to the conservation of salmon fisheries that is affected by it has long been a much-debated question, and the recent extension of the use of traps in southeastern Alaska has raised another and different question—the employment of labor as affected by the stationary and movable gear, respectively. A thorough investigation of the fisheries of Alaska should be undertaken by the Government to the end that legislation may be enacted which will not only conserve the supply, but which will also deal with the economic and other features of the industry. An experiment station is needed where investigations can be conducted in the utilization of fishes and other aquatic products. The rebating system as applied to the private operation of hatcheries should be immediately abolished; its operation has been unsatisfactory in nearly every particular and the Federal Government should alone operate all the hatcheries in Alaska through the Bureau of Fisheries. In the calendar year 1912 there were employed in the several branches of the fisheries 24,263 persons, an increase of 6,311 over 1911. Of these 10,101 were whites, 7,299 Indians, and 6,863 orientals. There was a noteworthy increase in the number of whites and natives employed, they being for the most part permanent residents of the Territory. The total investment in the fisheries of Alaska in 1912 was \$37,549,740, about 90 per cent of which was invested in salmon fishing. The finished product of all varieties of fish was valued at \$18,877,468. The total production of halibut in 1912 was 17,146,743 pounds, valued at \$945,502, as against 17,315,191 pounds, valued at \$822,362, in 1911.

Aids to navigation.—The need of more lights and other aids to navigation in the waters of Alaska, as well as surveys and resurveys, is insistent. Three passenger and freight steamers were wrecked the

past summer and others sustained minor injuries. A loss of 31 lives occurred when one of these steamers struck an uncharted rock in August last.

Natives and other inhabitants.—The number of Alaska insane under treatment on September 30, 1913, was 189, of which 165 were men and 24 women. A large percentage of the inmates are aliens, including Chinese and Japanese. Morningside Sanitarium, near Portland, Oreg., where the Alaska insane are being cared for under a contract with the Government has been inspected at proper intervals by agents of the Interior Department. Detention hospitals for the insane were constructed and occupied during the past summer at Fairbanks and Nome. These hospitals were authorized by an act of Congress approved June 25, 1910, but their construction was delayed for various reasons.

The condition of the native inhabitants continues to be fairly prosperous, this being especially true of those of southeastern and southwestern Alaska, the natives of those sections being as a whole self-reliant and usually industrious. Their worst physical enemy is the whisky peddler. Three special agents have been employed during the last fiscal year whose efforts have been directed toward the suppression of the liquor traffic among these people, and a fair amount of success has been attained. In southeastern Alaska 65 arrests were made during the fiscal year of persons charged with selling liquor to natives and in a large percentage of the cases convictions were obtained. An additional agent should be employed in the second judicial division, where there is now none. One agent is located in the first judicial division, one in the third, and one in the fourth. They are directly under the supervision of the governor's office.

Alaska during the fiscal year afforded a fair field for labor, especially in the southeastern section. In interior and northwestern Alaska a season of unparalleled drought created a smaller demand for mining and other labor. There were no strikes during the year and prices of labor in the several parts of the Territory remained practically stationary.

Taxation.—Nine of the incorporated towns which caused an assessment of property to be made and a tax to be levied this year reported a total assessed valuation of \$6,042,068. The tax rate of these towns ranges from one-half of 1 per cent to 2 per cent, the average being 1.81. Seven in the same list of nine towns levied a tax in 1912 also, when the assessed valuation aggregated \$4,123,687 as against \$4,864,017 this year.

The receipts from the issuance of hunters' licenses, shipping permits, and guide licenses are increasing annually, as more hunters are coming each year from the States and foreign countries to hunt big

game. The revenue now derived from these sources is covered directly into the United States Treasury instead of into the Alaska game fund, where it manifestly belongs and where it could be used for the further protection of game. There are many inequalities in the Alaska game law which call for amendatory legislation.

Mining.—Patents have been granted to two coal-land claimants in Alaska. These patents were issued for claims carrying an inferior quality of coal. Patents have been applied for in the Bering River and Matanuska sections, but none have been granted, while many applications have been canceled. There are extensive coal measures in these regions. The importation of coal from the States and from foreign countries during the last fiscal year amounted to 102,169 tons, valued at \$492,301. The market price at which coal is sold ranges from \$10 to \$20 a ton, according to the locality in which it is sold.

The value of the mineral output for 1913 has not been authoritatively estimated, but as a whole it will probably not be as large as that of 1912, due to a shortage of water for mining purposes in the placer gold regions. The gold production in the calendar year 1912 was valued at \$17,145,951. The silver production, chiefly incidental to gold mining, was 515,186 fine ounces, valued at \$316,839. The total value of all mineral products in 1912 was \$22,537,821, as compared with \$20,650,000 in 1911.

Water power.—The utilization of the water powers of Alaska for manufacturing purposes is now receiving attention. The many water-power sites found in southeastern Alaska are such as to present those essentials which must be reckoned with when hydroelectric plants are the objects to be attained. These essentials embrace a large amount of power all the year, accessibility to market, location for transportation of products, and proximity of raw materials to be used. That there is a field for large electrochemical plants in Alaska is shown from a consideration of the raw materials to be had and the demand for them when put into marketable form. These materials include timber, lime, sulphur, and many others used in manufacture of electrochemical products.

Schools.—There are now 26 schools for white children outside of incorporated towns, employing 37 teachers, with a total enrollment of 943 pupils. The act of January 27, 1905, limits the amount which may be expended in the construction of a school building to \$1,000, which is frequently found to be insufficient to cover the cost and which should be increased from \$1,000 to \$2,500, according to the size of the school. The law also provides that there shall be at least 20 white children of school age in a community outside of an incorporated town before a school shall be established, and it should be amended so as to make it possible to establish school districts in places

where there are as few as 15 white children. A law passed by the Territorial legislature provides for the compulsory education of white children and those of mixed blood living a civilized life; and similar provision is made for the compulsory education of native children and children of mixed blood not living a civilized life, where such children reside within 1 mile of a United States public school.

Railroads.—There has been no new railroad construction in Alaska for several years past, nor will there be until the coal-lands problem and other questions are permanently settled. Government construction and operation of railroads in Alaska is recommended. Private initiative is practically barred under existing conditions. Owing to the tax of \$100 per mile on railroads, two lines have not been operated during the past year. The nonoperation of these roads has worked a hardship on miners and prospectors, inasmuch as they afforded facilities for the transportation of supplies. The Federal tax on railroads should be suspended for the present by legislative action. Wagon-road and trail work was continued during the year under the direction of the Board of Road Commissioners for Alaska. At the end of the fiscal year 1913 the total mileage of roads and trails was: Wagon roads, 862 miles; sled roads, 617 miles; trails, 2,116 miles, which latter include 253 miles of trails that are temporarily staked each winter.

Public health.—Public health conditions generally have been good, although during the year there have been a number of epidemics, confined largely to the native population. A serious outbreak of measles was reported on the islands of Kodiak and Afognak late in October, and prompt measures for the stamping out of the disease were taken by the Federal and Territorial authorities. An act passed by the Territorial legislature provides for the registration and prevention of communicable diseases, and another act passed by the same body provides for the collection and registration of vital statistics.

Territorial legislation.—The Territorial legislature, which was established by the act of Congress approved August 24, 1912, convened for its first session on March 3 last, the session lasting 60 days. Bien-nial sessions will be held hereafter.

An act passed by the Territorial legislature provides for the organization of banking corporations and the regulation of the business of banking and its supervision by a Territorial banking board. Examinations of banks, other than national banks, must be made at least once annually.

Land laws.—Simplification of the land laws, so far as they apply to Alaska, is desirable in order to encourage the settlement of the agricultural lands and to meet other peculiar conditions found only in an isolated country. Under the act of May 17, 1884, it was provided that Indians and other persons should not be disturbed in the

possession of any lands actually in their use or occupancy. Few, if any, of these claimants remain in possession of the original claims. So many years have elapsed that proof of ownership of the land is now difficult to secure, and if the rights of these persons or their descendants are to be recognized and preserved, Congress should provide some method whereby they may obtain title.

Capitol building.—An appropriation was made by the act of 1910 for the construction of a general office building, intended to provide quarters for the post office, customhouse, governor's offices, surveyor general's offices, and a number of other offices at Juneau. An excellent site has been purchased and tests of the ground were made for the foundation during the past summer. The limit of cost of \$200,000 was not sufficient at the time it was authorized, and since that time a legislature has been established and the question of securing suitable quarters for it is a serious one. The population of Juneau is increasing rapidly, and in order to provide a suitable capitol building, with accommodations for the legislature and all of the government offices as well as rooms for the Alaska Historical Library and Museum, the cost limit should be increased to \$600,000.

HAWAII.

The governor, in his annual report, states that the year has been one of prosperity and progress.

Imports and exports.—Imports and exports aggregated \$79,474,880, which, although less by \$4,668,880 than the amount for the preceding year, was greater by \$7,850,221 than the largest amount before that. The imports were \$36,002,940, an increase of \$7,308,618, and the exports \$43,471,940, a decrease of \$11,977,498. This decrease was wholly in the exports to continental United States, on account of the low price of sugar and a shortage in the sugar crop caused by drought. The imports from continental United States have more than doubled during the last six years. The exports of the principal minor crop, pineapples, have increased about fivefold during the last five years. The tonnage, exclusive of interisland traffic, naval vessels, and Army transports, has increased about 66 per cent since the first year of Territorial government, the largest increase having occurred during the last year. The customs receipts were \$1,869,513.89, an increase of \$226,316.52, and the internal-revenue receipts \$240,553.38, a decrease of \$25,672.04. Since the organization of Territorial government the customs receipts have aggregated \$18,426,172.12 and the internal-revenue receipts \$1,470,437.42. The Federal Government accomplished much during the year in the construction of its naval station, fortifications, and military posts, and greatly increased its forces in the Territory.

Territorial finances.—Territorial receipts nearly equaled disbursements, notwithstanding large expenditures for public improvements and other special purposes. The net cash balances in all current revenue accounts at the close of the year aggregated \$1,308,247.09, a decrease of only \$5,539.34. The total revenues collected by the Territory and counties aggregated \$4,680,750.90, an increase of \$364,778.14, of which \$2,671,219.58 went to the Territory and \$2,009,531.32 to the counties. Out of \$3,985,006.01 available for the Territory from current revenues, including cash on hand, \$2,676,758.92 was expended.

Territorial 4 per cent bonds were paid to the amount of \$110,000 and additional public improvement 4 per cent bonds were issued to the amount of \$1,500,000 at 100.5887. At the close of the year the bonded indebtedness was \$6,844,000, or 3.90 per cent of the assessed value of property. A portion of this indebtedness was incurred for county improvements. There are no county bonds.

Bank deposits, capitalization of corporations, and insurance business.—Bank deposits at the close of the year aggregated \$17,026,297.02, a decrease of \$1,162,838.48, but greater than for any preceding year except the last. The capitalization of domestic corporations was \$172,733,078, an increase of \$4,515,500. New fire, life, and marine insurance was written to the amount of \$101,375,950.43.

Work of Territorial legislature.—The legislature at its biennial session last spring enacted much legislation of an advanced character, particularly on political, industrial, and social subjects. Laws were passed providing, among other things, for the creation of a public utilities commission with extensive powers, direct primaries, the prohibition of political contributions by corporations, and to some extent for the merit system in public services, the separation of Territorial and local elections, elections at large instead of by districts, the shortening of ballots, and the further adjustment of the relations between the Territorial and local governments and the development of the latter. On social subjects, laws were passed providing remedies for the desertion of wives and children, compelling fathers to support their illegitimate children, raising the age of consent of females, limiting the working hours of females under 16 years of age, and providing for the more effectual enforcement of the liquor laws. Provision was made also for a new compilation and revision of all the laws of the Territory.

Population.—The first census, in 1832, showed a population of 130,313, which declined until 1872, when it was 56,897, since when it has increased until the last census, in 1910, it was 191,909. An estimate based on statistics of births, deaths, arrivals, and departures shows that during the three years since the last census it has grown to 217,744, an increase of 25,835, or 13.46 per cent. During these

three years there were decreases in pure Hawaiians through an excess of deaths and Chinese through an excess of departures, and increases in Spanish introduced by the Territorial government, other Caucasians, chiefly Americans, including many in the military forces of the United States, Filipinos introduced by the sugar planters, and part-Hawaiians, Portuguese, and Japanese through an excess of births. During the year the recorded births numbered 5,568 and the deaths 3,232. The Territory introduced 2,413 Spanish, 228 Portuguese, and 65 Russians at a cost of \$328,580.61. The sugar planters introduced 5,747 Filipinos. During the last six and one-half years the Territory has introduced 7,695 Spanish, 5,196 Portuguese, and 2,121 Russians, a total of 15,012, at a cost of \$1,226,957.48. During the last four years the sugar planters have introduced 13,715 Filipinos. The percentage of non-Asiatic employees on the sugar plantations has increased from 12.30 at the time of the organization of Territorial government to 37.15 at the present time. The first year under a bonus system adopted last year shows an increase of \$335,993.43, or 13 per cent, over the regular wages of plantation employees receiving \$50 or less per month. Living conditions of such employees have been generally improved by the substitution of cottages with modern sanitary arrangements and garden space in place of tenement houses.

During the year 325 homesteads were taken. During the three years since the amendments of the organic act 980 homesteads have been taken, with a larger percentage taken by Americans and other Caucasians than previously. During the 13 years of Territorial government 2,523 homesteads have been taken, namely, 931 during the first 7 years, or an average of 133 a year, and 1,592 during the last 6 years, or an average of 265 a year. Much progress has been made in working out a successful homestead system with a view to the encouragement of genuine homesteading and discouragement of taking homestead lots for purposes of speculation or investment. The topographic and hydrographic surveys of the Territory have made good progress under increased appropriations. Another large irrigation project was begun by private enterprise—for conveying water from the windward to the leeward side of the island of Oahu by means of tunnels, the longest of which will be nearly three miles in length. The project will probably cost upward of \$2,000,000. Additional forest reserves were created to the extent of 57,305 acres. The introduction of parasitic enemies of the Mediterranean fruit fly from West Africa gives promise of exterminating that pest, which has caused much damage during the last few years.

Transportation.—Transportation facilities are constantly improving. During the year five large steamers were added and the construction of six others begun for the traffic with the mainland. The construction of a large floating dry dock was begun at Honolulu.

Much railroad and wagon road construction was accomplished as well as considerable work in building wharves and making harbor improvements. Work was begun also on two powerful wireless stations for communication with California and Japan.

Public works.—Much progress was made in carrying out the large program laid out two years ago for the construction of various public works, chiefly wharves and harbors, roads, water and sewer works, and school and other public buildings, at an expenditure of about \$5,000,000.

Education.—The new financial policy adopted two years ago for the public schools is operating well. The object of this is to obtain the necessary buildings and teachers to accommodate all children of school age and greater teaching efficiency through the payment of higher salaries. During the last year the amount expended for the public schools was \$946,541.50, or at the rate of \$36.73 per pupil, as compared with \$483,594.50, or at the rate of \$23.48 per pupil two years ago. Of this amount \$677,799.72 was for maintenance; that is, exclusive of new buildings, or at the rate of \$26.44 per pupil, as compared with \$23.27 two years ago. During these two years the number of teachers in the public schools has increased from 523 to 692, or 32.51 per cent, and the number of pupils from 20,597 to 25,631, or 24.44 per cent. The number of pupils in all schools, both public and private, has increased during the 13 years of Territorial government from 15,537 to 32,938, or 112 per cent. The appropriations for vocational training have been greatly increased. During the last year a Territorial library was opened in a handsome building located in the civic center of Honolulu with about 20,000 volumes and an assured annual income of about \$15,000.

Health.—No epidemic occurred during the year. Much additional legislation was enacted for the protection of the public health and the work of the health department, which is of unusual extent and importance in this Territory in view of local conditions, was pushed vigorously.

NATIONAL PARKS AND RESERVATIONS.

The setting aside of tracts of land in various sections of the United States as pleasure grounds for all the people was begun by Congress in the establishment, by the act approved March 1, 1872 (17 Stat., 32), of the Yellowstone National Park. Subsequently other lands in various sections of the country have from time to time been set aside for that purpose, as well as a practical means of preserving the wonders of nature therein from desecration. Over 4,436,900 acres of land have at the present time been set aside for park purposes, the total number of national parks at present being 12, and recommendations have been submitted to Congress looking to the

adding thereto of the Grand Canyon of the Colorado River with its wonderful scenic features.

The areas of these parks, with date of establishment of each, are as follows:

Areas of national parks.

Name.	Date of establishment.	Area.
		<i>Acres.</i>
Yellowstone, in Wyoming, Montana, and Idaho.....	Mar. 1, 1872	2, 142, 720
Yosemite, in California.....	Oct. 1, 1890	719, 622
Sequoia, in California.....	Sept. 25, 1890	161, 597
General Grant, in California.....	Oct. 1, 1890	2, 536
Mount Rainier, in Washington.....	Mar. 2, 1899	207, 360
Crater Lake, in Oregon.....	May 22, 1902	159, 360
Wind Cave, in South Dakota.....	Jan. 9, 1903	10, 522
Sullys Hill, in North Dakota.....	Apr. 27, 1904	780
Platt, in Oklahoma.....	July 1, 1902	848. 22
	Apr. 21, 1904	
Mesa Verde, in Colorado.....	June 29, 1906	48, 966. 40
	June 30, 1913	
Hot Springs Reservation, in Arkansas.....	June 16, 1880	911. 63
Glacier, in Montana.....	May 11, 1910	981, 681
Total.....		4, 436, 904. 25

The public interest in these national reservations, not only in this country but abroad, is clearly evidenced by the increasing number of visitors thereto. Numerous requests have been received from abroad for literature showing the method of creation and the management of our national parks, and it is understood that national parks somewhat along the lines of those of this country have been, or are about to be, created in Argentina, Austria, Canada, Denmark, France, Germany, Norway, Sweden, and Switzerland. There are now pending before Congress 12 bills looking to the creation of new national parks as follows: In California, 3; in Oregon, 3; in California and Nevada, 1; and 1 each in Colorado, Idaho, Kentucky, Maine, and the Territory of Hawaii.

Visitors.—During the present year the total number of visitors to all the parks aggregated 251,703, as against 229,084 in 1912, 224,000 in 1911, and 198,506 in 1910. Travel to these parks will doubtless be greatly augmented hereafter, particularly during 1915, when the Panama-Pacific International Exposition will be held in San Francisco, at which time the various transcontinental railroads will doubtless provide a transportation rate calculated to attract tourists to these parks, as well as to the exposition.

Economic value of national parks.—Aside from the cost of transportation from points of departure to the park, some idea of the economic value of tourist travel through these parks may be obtained by reference to the financial reports of concessions in three of the larger parks, to wit, the Yellowstone, where receipts for 1912 total \$1,067,161.34, as against \$1,050,039 for 1911; the Yosemite, \$311,-

444.32 for 1912, as against \$295,500 for 1911; and the Mount Rainier, \$56,735.93 for 1912.

Appropriations and revenues.—The total appropriations made by Congress for protection and improvement of these parks during the year, expendable under this department, was \$244,550, and the total revenues received from concessionaires in all the parks was \$96,630.82.

Proposed bureau of national parks.—In the annual report of the Secretary of the Interior for 1911, in discussing national-park affairs, he stated:

While public interest in, and use of, these reservations is steadily increasing, as shown by the growing number of visitors, adequate provision has not been made for their efficient administration, and sufficient appropriations have not been made for their proper care and development. At present each of these parks is a separate and distinct unit for administrative purposes. The only general supervision which is possible is that obtained by referring matters relating to the national parks to the same officials in the office of the Secretary of the Interior. Separate appropriations are made for each park, and the employment of a common supervising and directing force is impossible. Many of the problems in park management are the same throughout all of the national parks, and a great gain would be obtained and substantial economies could be effected if the national parks and reservations were grouped together under a single administrative bureau. Bills to create a bureau of national parks have heretofore been introduced in Congress, and, in my judgment, they should immediately receive careful consideration so that proper legislation for this purpose may be enacted. Adequate appropriation should also be made for the development of these pleasure grounds of the people, especially through the construction of roads and trails and their proper care and maintenance.

In a special message to Congress, dated February 3, 1911, President Taft stated:

I earnestly recommend the establishment of a bureau of national parks. Such legislation is essential to the proper management of those wondrous manifestations of nature, so startling and so beautiful that everyone recognizes the obligations of the Government to preserve them for the edification and recreation of the people.

A bill (S. 826, 63d Cong., 1st sess.) to establish a national-park service, and for other purposes, is now pending in Congress and has been reported favorably by the Senate Committee on Public Lands, and its enactment into law is earnestly recommended.

Automobiles in the parks.—Automobiles have heretofore been admitted under license and strict regulations governing travel upon the roads into the Mount Rainier National Park, the Crater Lake National Park, the Glacier National Park, the Wind Cave National Park, the Platt National Park, and the General Grant National Park, and during the year automobiles were permitted over a road in the northwestern section of the Yellowstone National Park not forming a part of the generally traveled routes in that reservation, to accommodate the people of Gallatin County, Mont. During the year automobiles, under appropriate regulations, were also admitted over the

Giant Forest Road, in the Sequoia National Park, and into the Yosemite National Park, Cal., over the Coulterville Road from the Merced Grove of Big Trees into the Yosemite Valley, and steps are now being taken looking to the use of other roads in said reservations by automobiles. The generally traveled roads in the Yellowstone and Mesa Verde National Parks, and the Hot Springs Reservation, Ark., are not in such condition as to permit of safety to individuals and animals in their joint use by motor-driven vehicles and vehicles drawn by horses. Adequate appropriations should therefore be made to put the roads in these parks in such condition as that they can be used by all persons at all times, irrespective of the means of conveyance thereover employed. Licenses have been issued during 1913 as follows:

Automobile licenses issued season of 1913.

	Automobiles.	Motor cycles.
Mount Rainier.....	1,197	184
Crater Lake.....	761	13
Glacier.....	307	1
Sequoia.....	77	2
General Grant.....	152	8
Yosemite.....	132	
Wind Cave.....	9	

Sanitary inspections.—Sanitary inspections have been made during the year by a chemist of the United States Geological Survey of camp, hotel, and other conditions in the Glacier, Yellowstone, and Yosemite National Parks with a view to affording better protection from a hygienic standpoint to visitors to those reservations, and similar protective measures will be taken as appropriations permit where necessary in other national parks.

Expenditure of revenues.—In all the national parks, except the Crater Lake and Mesa Verde, the acts of Congress setting aside the lands embraced therein for park purposes authorize the expenditure of the revenues derived from concessions therein in the management and protection of the reservations. In the interest, therefore, of good administration, legislation should be enacted authorizing the use of the revenues of these two parks for purposes of administration, protection, etc., therein. In the estimates submitted to Congress for these reservations, appropriate legislation along these lines has been recommended.

Patented lands.—In all the national parks, with the exception of the Yellowstone, General Grant, Platt, Wind Cave, and Sullys Hill, their administration is embarrassed by the fact that they contain within their boundaries private holdings and some toll roads. These

private holdings are as follows: Yosemite National Park, 19,827 acres; Sequoia National Park, 3,716.96 acres; Crater Lake National Park, 1,337 acres and 1,121.11 acres of unperfected bona fide claims; Mesa Verde National Park, 875 acres and 118 acres unperfected bona fide claims; Mount Rainier National Park, 18.2 acres; and Glacier National Park, 8,864.40 acres of patented lands and 7,803.71 acres of unperfected bona fide claims. These lands, including toll roads in the Sequoia and Yosemite National Parks, should be acquired by the Government. In discussing this matter in his last annual report the Secretary of the Interior stated:

It is of special and urgent importance that provision should also be made by Congress for the extinguishment of private holdings in the several parks. These holdings seriously interfere with the proper administration of the parks and impair their usefulness and beauty in many ways. They can be extinguished either by way of direct appropriation for their purchase or by authorizing their exchange for lands or timber within the particular parks or within the national forest reserve adjacent thereto. The public timber so exchanged can, in many cases, be confined to dead or matured timber which can be removed from the parks without injuriously affecting the scenic beauty thereof. If authority of this sort is vested in the Secretary of Agriculture and the Secretary of the Interior, as to the reserves of which they have jurisdiction respectively, exchanges of park or forest lands or timber can be made for appropriate strips of private timbered lands along the public roads within the exterior limits of the parks or forest reserves, so as to protect the scenic beauty of these roads from impending destruction.

Jurisdiction.—In the Yellowstone National Park and the Platt National Park the United States has exclusive jurisdiction thereover, and Congress has provided a means of enforcement of the laws and regulations pertaining thereto. In the other national parks, however, over which the laws of the States in which they are located obtain, great difficulties in administration have been encountered, owing to the fact that the department has no jurisdiction to punish offenses in violation of the regulations relating thereto, and particularly in the matter of preventing depredations on game and the selling of liquor therein. The Legislature of the State of Montana, by act of February 17, 1911, ceded exclusive jurisdiction to the United States of the territory within the metes and bounds of the Glacier National Park, and the Legislature of the State of Washington by act of March 16, 1901, ceded exclusive jurisdiction to the United States over lands in the Mount Rainier National Park. A bill looking to the acceptance of cession of jurisdiction by the State of Montana over the Glacier National Park is now pending in the Senate, having been reported upon favorably by the Senate Committee on Public Lands, and should be enacted into law at the earliest practicable date. A bill providing for acceptance of jurisdiction over the Mount Rainier National Park will, it is understood, be shortly intro-

duced in Congress, and it should likewise receive early and favorable consideration.

There are hereto appended tables giving the location, date of establishment, area, private holdings, if any, and number of visitors, and the special characteristics of the various national parks under the supervision of the Secretary of the Interior, the appropriations made by Congress for the protection and improvement thereof during 1913 and seven years prior thereto, as well as revenues derived from leases, privileges, and concessions in said reservation received during said period, as well as a statement of the automobile receipts during 1913.

HETCH HETCHY VALLEY, YOSEMITE NATIONAL PARK.

A permit was issued by the Secretary of the Interior on May 11, 1908, granting to the city of San Francisco right of way over certain lands in the Yosemite National Park, with permission to take water from Lake Eleanor and Hetch Hetchy Valley in that park, under the conditions therein set forth. The stipulations of this permit provided, among other things, that the Lake Eleanor site should be developed to its full capacity before beginning the development of the Hetch Hetchy site, and also for the protection of the rights of the Modesto irrigation district and the Turlock irrigation district to the use of the natural flow of the Tuolumne River and its branches to the full extent of their claims, etc. Thereafter the city under said permit surveyed a dam site at Lake Eleanor and made preliminary surveys of the Lake Eleanor main canal running from the dam above mentioned to the junction of the Hetch Hetchy main canal, etc., which were approved by the department February 25, 1909, and took steps looking to the clearing and exploration of foundations for the dam site.

In February, 1910, the then Secretary of the Interior issued a citation to the mayor and supervisors of the city and county of San Francisco to show cause why the Hetch Hetchy Valley reservoir site should not be eliminated from the permit theretofore granted to the city on May 11, 1909, for a water supply for said city and county. A board of Army engineers was detailed by the Secretary of War as an advisory board to the Secretary of the Interior in the disposition of the matter.

Upon consideration of the application of the city for an extension of time to secure further data, a continuance was granted for that purpose until June 1, 1911, and the board of Army engineers was authorized to receive such data as might be furnished by the city to establish its claim for the necessity for the use of the Hetch Hetchy site and to secure such other necessary data as they might deem

advisable, and an appropriation of \$12,000 was granted by Congress to defray the expenses of this board.

On account of the stated inability of the city to procure within the time allotted the data deemed necessary by the board, postponement was granted from time to time by the Secretary of the Interior, the final documents not being submitted by the city until September 1, 1912. The final hearing on the matter was had before the then Secretary of the Interior November 25 to 30, 1912, at which the parties interested were represented and at which the Army board was present. The report of the Army board was submitted to the Secretary of the Interior on February 19, 1913, and was transmitted to Congress. (H. Doc. No. 54, 63d Cong., 1st sess.)

In the judgment of the board, in making a selection of one of the several sources of water supply that could be obtained and used by the city of San Francisco and adjacent communities, the determining factor is principally one of cost. The project proposed by the city of San Francisco, known as the Hetch Hetchy project, in the opinion of the board, was \$20,000,000 cheaper than any other feasible project for furnishing an adequate supply of water to the city, and such project had the additional advantage of permitting the development of a greater amount of water power than any other. The use of the Hetch Hetchy Valley as a reservoir site was regarded as necessary if the full flow of the upper Tuolumne River was to be conserved. Furthermore, it was of the opinion that there would be sufficient water if adequately stored and economically used to supply both the reasonable demands of the bay communities and the reasonable needs of the Turlock-Modesto irrigation districts for the remainder of the present century.

By reason of the fertility of the lands under irrigation and their aridness without water, the necessity of preserving all available water in the valley of California will sooner or later make the demand for the use of the Hetch Hetchy Valley as a reservoir "practically irresistible." A delay of the few years in transforming Hetch Hetchy Valley into a reservoir is of but little importance, and it was therefore not deemed necessary in the judgment of the board to require delaying the construction of this reservoir until the Lake Eleanor and Cherry sources have been fully developed.

Under date of March 1, 1913, former Secretary Fisher, in disposing of this case, stated, among other things:

In view of the language of the Yosemite Reservation act of 1890 I believe that, as a matter of broad public policy and not at all as a matter of necessary statutory construction, the natural condition of so important a natural curiosity or wonder as the Hetch Hetchy Valley should not be radically changed without the express authority of Congress embodied either in a statute granting a permit and fixing its terms and conditions or by an act conferring upon the Secretary of the Interior the power to issue such a permit upon terms and conditions

to be fixed by him within broad general limitations. I have repeatedly urged that the act of 1901 should be amended in this very way.

On March 12, 1913, there were presented for consideration, with a view to approval, maps constituting application for rights of way through the Yosemite National Park under the act of February 15, 1901, filed by the city and county of San Francisco, under surveys which had been authorized in the park by the department under date of December 3, 1912, and upon consideration thereof the maps were approved, with the following indorsement:

The foregoing map, filed under the act of February 15, 1901, by the city of San Francisco, assignee of James D. Phelan, is hereby approved, subject to the filing by the city of San Francisco of such formal stipulations and the fulfillment of such conditions as may be hereafter indicated, it being understood that no permanent work of any character whatsoever shall be constructed or done and that such map is filed and approved for the purpose of enabling the city of San Francisco to protect and develop its private water rights, acquired under the laws of the State of California, pending action by Congress upon the application of the city of San Francisco. The approval of May 11, 1908, of the Hetch Hetchy reservoir site is hereby revoked.

Subsequently H. R. 6281 was introduced in Congress, "Granting to the city and county of San Francisco certain rights of way in, over, and through certain public lands, the Yosemite National Park, and Stanislaus National Forest, and certain lands in the Yosemite National Park, the Stanislaus National Forest, and the public lands in the State of California, and for other purposes." Hearings were had thereon before the House Committee on Public Lands, and a new bill (H. R. 7207, granting authority to the city and county of San Francisco to secure, under conditions therein set forth, water from the Yosemite National Park), after very full discussion, subsequently passed both Houses of Congress.

The department, in reporting favorably upon the measure, stated, among other things:

The permission desired by the city and county of San Francisco to secure water from the Yosemite National Park for municipal purposes, etc., should be accorded. The communities on San Francisco Bay constitute the largest center of population on the Pacific coast and are urgently in need of an adequate supply of pure, wholesome water for domestic consumption and for fire protection. This project would insure the development of a dependable supply of water for the use of the adjacent irrigation districts and it would also provide for the development of power now going to waste. The city of San Francisco has evidenced its good faith in this matter by providing for a large bond issue looking to securing money to effectuate the grant if accorded. The bill under consideration fully protects the interests of the United States in the park and elsewhere. Under the project as proposed by the city the floor of the Hetch Hetchy Valley, now difficult of access and frequently unhealthy, will be converted into a lake of great beauty and be provided with suitable approaches. Under the provisions of this bill the revenues derived by the Government from the generation of electrical energy from the waters in the Hetch Hetchy Valley,

which in time will grow into a very considerable sum, are to be used for the maintenance and improvement of the Yosemite National Park, and the city of San Francisco has undertaken to construct and maintain roads, trails, and bridges, which will practically result in a great enlargement of the park areas of the high Sierras by making them more safely and easily accessible.

NATIONAL MONUMENTS AND PRESERVATION OF AMERICAN ANTIQUITIES.

By an act approved June 8, 1906, entitled "An act for the preservation of American antiquities," the President of the United States is authorized, "in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments." Under such authority the President has created the twenty-nine monuments:

National monuments administered by Interior Department.

Name.	State.	Date.	Area.
			<i>Acres.</i>
Devils Tower.....	Wyoming.....	Sept. 24, 1906	1,152
Montezuma Castle.....	Arizona.....	Dec. 8, 1906	160
El Morro.....	New Mexico.....	do.....	160
Chaco Canyon.....	do.....	Mar. 11, 1907	120,629
Muir Woods ¹	California.....	Jan. 9, 1908	295
Pinnacles.....	do.....	Jan. 16, 1908	2,080
Tumacacori.....	Arizona.....	Sept. 15, 1908	10
Mukuntuweap.....	Utah.....	July 31, 1909	15,840
Shoshone Cavern.....	Wyoming.....	Sept. 21, 1909	210
Natural Bridges ²	Utah.....	Sept. 25, 1909	12,740
Gran Quivira.....	New Mexico.....	Nov. 1, 1909	160
Sitka.....	Alaska.....	Mar. 23, 1910	57
Rainbow Bridge ³	Utah.....	May 30, 1910	160
Lewis and Clark Cavern.....	Montana.....	May 16, 1911	160
Colorado.....	Colorado.....	May 24, 1911	13,883
Petrified Forest.....	Arizona.....	July 31, 1911	25,625
Navajo ⁴	do.....	Mar. 14, 1912	360

¹ Estimated area.

² Donated to the United States.

³ Originally set aside by proclamation of Apr. 16, 1908, and contained only 120 acres.

⁴ Within an Indian reservation.

One new monument, Cabrillo National Monument, was created during the fiscal year at Point Loma, of a small tract of land which lies within the military reservation at Fort Rosecrans, Cal., the same being of historic interest because of the discovery of the territory now partly embraced in the State of California, by Juan Rodriguez Cabrillo, who first sighted land on September 28, 1542. This monument is under the jurisdiction of the War Department.

Administrative conditions.—The supervision of these various monuments has, in the absence of any specific appropriation for their protection and improvement, necessarily been intrusted to the field officers of the department having charge of the territory in which the several monuments are located.

Administrative conditions continue to be unsatisfactory, as no appropriation of funds has yet been made available for this important, protective, and preservative work. Such supervision as has been possible in the cases of a few monuments only has been wholly inadequate and has not prevented vandalism, unauthorized exploitation or spoliation of relics found in those prehistoric ruins, whose preservation is contemplated by the passage of the act of June 8, 1906. An estimate in the sum of \$5,000 for protection of these monuments was submitted last year, but no appropriation was made, and a similar estimate will again be submitted to Congress, not so much for the purpose of preserving by restoration the objects reserved in the national monuments as to prevent the removal of valuable relics and vandalism. Monuments suffering from these causes should be provided with a custodian or superintendent, and in this way a small general appropriation can be made most useful and its expenditure will be wholly in the interest of the public. The protection and preservation of the national monuments as public reservations are of great interest and importance because a great variety of objects, historic, prehistoric, and scientific in character, are thus preserved for public use intact, instead of being exploited by private individuals for gain and their treasures scattered. These reserves should be administered in connection with the national parks, which they strongly resemble. It would be difficult to define one in terms that would exclude the other. The renewal of the estimate for a small appropriation has been made for the purpose of keeping this class of reserves intact until such time as Congress shall authorize the creation of some administrative unit which shall take over both the parks and monuments and administer them under a general appropriation.

National monuments under other departments.—The following national monuments are not administered by the Secretary of the Interior:

National monuments administered by Department of Agriculture.

Name.	State.	Date.	Area.
			<i>Acres.</i>
Cinder Cone.....	California.....	May 6, 1907	¹ 5, 120
Lassen Peak.....	do.....	do.....	¹ 1, 280
Gila Cliff Dwellings.....	New Mexico.....	Nov. 16, 1907	160
Tonto.....	Arizona.....	Dec. 19, 1907	¹ 640
Grand Canyon.....	do.....	Jan. 11, 1908	¹ 806, 400
Jewel Cave.....	South Dakota.....	Feb. 7, 1908	¹ 1, 280
Wheeler.....	Colorado.....	Dec. 7, 1908	¹ 300
Oregon Caves.....	Oregon.....	July 12, 1909	480
Devil Postpile.....	California.....	July 6, 1911	¹ 800
Mount Olympus.....	Washington.....	Apr. 17, 1912	¹ 608, 480

¹ Estimated area.

National monuments administered by War Department.

Name.	State.	Date.	Area.
Big Hole Battlefield ¹	Montana.....	June 23, 1910	Acres. 5
Cabrillo.....	California.....	Oct. 14, 1913	1

¹ Set aside by Executive order.

Excavation of ruins.—Paragraph 3 of the uniform rules and regulations promulgated by the Secretaries of the Interior, Agriculture, and War, under date of December 28, 1906, to carry out the provisions of the act for the preservation of American antiquities, reads as follows:

Permits for the excavation of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity will be granted by the respective Secretaries having jurisdiction to reputable museums, universities, colleges, or other recognized scientific or educational institutions, or to their duly authorized agents.

During the year three permits were granted for the examination, excavation, and gathering of specimens, as follows:

To the Peabody Museum of Harvard University of the ruins in Chinlee Valley, west and northwest of Canyon Del Muerto, Ariz.

To the Bureau of American Ethnology of the Smithsonian Institution in the Chaco Canyon National Monument within the Navajo Indian Reservation in northwestern New Mexico.

To the Utah State Museum, University of Utah, in the Navajo National Monument, and small ruins in San Juan County, Utah, and near Bluff, Utah.

Three permits were granted for the gathering of samples of silicified wood from the Petrified Forest National Monument, Arizona, as follows: To the Ohio State Archaeological and Historical Society, of Columbus, Ohio; to Dr. W. Thiele, representing the University of Strassburg, Germany; and to Prof. Alfred La Croix, representing the Museum of Natural History, Paris, France.

BIRD RESERVES.

During the year nine new reserves for the protection of native birds were created, as follows:

Bird reserves created during fiscal year 1913.

Chamisso Island Reservation, Alaska, created December 7, 1912.

Pishkun Reservation, Mont., created December 17, 1912.

Desecheo Island Reservation, P. R., created December 19, 1912.

Gravel Island Reservation, Wis., created January 9, 1913.

Aleutian Islands Reservation, Alaska, created March 3, 1913.

Canal Zone, Panama, created March 19, 1913.

Walker Lake Reservation, Ark., created April 21, 1913.

Petit Bois Island Reservation, Ala. and Miss., created May 6, 1913.

Anaho Island Reservation, Nev., created September 4, 1913.

Niobrara Reservation, Nebr., enlarged November 14, 1912.

As appears from this list these reservations are scattered between Alaska and Porto Rico, two new ones in Alaska, one of which (the Aleutian Islands) was established not only for the purpose of protecting native birds but also for the encouragement of propagation of fur-bearing animals, reindeer, and food fishes. For the first time a bird reserve was established in the States of Arkansas, Nevada, Alabama, and Mississippi, and after a careful consideration, based upon representations made by this department, the Isthmian Canal Commission secured an Executive order for the protection of the native birds within the zone, which, in its punitive features, conforms to section 84 of the United States Penal Code. Jurisdiction over the Canal Zone Reservation is, however, retained by the Isthmian Canal Commission instead of being placed with the Department of Agriculture, as is the case in all other Government bird reserves.

In addition to these 9 new reserves, the Niobrara Reservation, Nebr., which was created by Executive order dated January 11, 1912, was enlarged by a second order of November 14, 1912, so as to include within its boundaries about 614 acres, covering the old parade ground of the Fort Niobrara Military Reservation, including a spring of fresh running water and some of the military buildings and barracks which could be used for stables and for residence purposes by a custodian. This additional tract has been fenced and small herds of buffalo, elk, and deer, donated by J. W. Gilbert, a citizen of Nebraska, have been permanently domiciled therein, and it is believed that the climate and natural environment will insure the healthful and rapid increase of all of these most valuable of the larger native mammals.

The creation of these 9 additional reservations brings the total number of bird reserves up to 65, and active administrative work by the Agricultural Department upon all of the reserves within its jurisdiction, which have been in serious need of efficient warden service, has been most satisfactory.

ELEEMOSYNARY INSTITUTIONS.

GOVERNMENT HOSPITAL FOR THE INSANE.

Movements of population.—On June 30, 1913, there were remaining in the hospital 2,988 patients, as against 2,898 on June 30, 1912, an increase of 90 patients. There were admitted during the year 746 patients, an increase over the previous year of 13, this being the largest number of admissions in the history of the institution, with

one exception, to wit, the year 1903-4, when the number was 766. The total number of patients treated during the year was 3,644, an increase of 49 over last year. The number of discharges, including deaths, was 656, a decrease of 41, despite the increase in population. The decrease in the number of deaths was 11. The daily average number of inmates was 2,950.66, as against 2,871.75 of the previous year, an increase of 78.91.

The training school for nurses graduated 5 male and 18 female nurses in May. Twenty-four men and 12 women were promoted from the junior class to the senior class of the training school.

Patients during fiscal year ended June 30, 1913.

	Male.		Female.		Total.
	White.	Colored.	White.	Colored.	
Remaining June 30, 1912.....	1,762	374	486	278	2,898
Admitted during the year.....	455	94	125	72	746
Total number under treatment.....	2,217	468	611	348	3,644
Discharged:					
Recovered.....	68	14	31	7	120
Improved.....	26	11	13	7	57
Unimproved.....	60	10	27	7	104
Not insane.....	37	6	5	6	54
Died.....	200	52	37	32	321
Total.....	391	93	113	59	656
Remaining June 30, 1913.....	1,826	375	498	289	2,988

Improvements.—The principal improvement made during the year was the erection of 5 tuberculosis cottages to accommodate 20 patients each. At the end of the fiscal year these cottages were approaching completion and were ready for occupancy early in the fall. The largest work of remodeling is the changing of the electrical layout from direct to alternating current. This work, which has been in progress now for some time, is approaching its last stage. Practically all of the buildings have been rewired that required rewiring, and preparations are being made to start work on the final changes in the machinery at the power plant.

Needs of the hospital.—The hospital has been increasing rapidly in size and the 1,000 beds provided by the hospital extension for which provision was made by Congress some years ago are already filled. In certain portions of the institution there is evidence of crowding, notably so in the female portion, and a new building for their accommodation will be needed in the near future. New buildings are also required for the epileptic colony, and better quarters should be provided for the medical staff of the institution and their families.

If the institution is materially to be increased over its present size the acquirement of additional land is imperative. The hospital has not now enough land for its purposes and if additional land is to be acquired it should be purchased at the earliest possible date as the neighborhood in the vicinity of the hospital is becoming more and more thickly settled as the years go by, and the price of land is progressively increasing. Each year the purchasing of additional land is delayed means that the Government ultimately will have to pay a higher rate therefor. The appropriation for additional land should provide for the purchase thereof by the Secretary of the Interior, and in event of his being unable to acquire the same at a reasonable price condemnation proceedings therefor be authorized.

In 1912 a committee of six, consisting of Surg. Gen. George H. Torney, United States Army, representing the Secretary of War; Surg. A. W. Dunbar, representing the Secretary of the Navy; Mr. Robert V. La Dow, superintendent of prisons, representing the Attorney General; Maj. William V. Judson, Corps of Engineers, United States Army, representing the Commissioners of the District of Columbia; Mr. Scott C. Bone, representing the Board of Visitors of the Government Hospital for the Insane; and Dr. William A. White, superintendent of the Government Hospital for the Insane, representing the department, were, after consultation with the President, designated by the Secretary of the Interior to make a thorough investigation of the needs of the hospital and the future policy for its growth and development; their report on the subject was subsequently transmitted by the President to Congress for consideration (S. Doc. 256, 62d Cong., 2d Sess.). This report discusses very fully the needs of the hospital under four heads: (*a*) Defects in the laws governing the conduct of the institution and the commitment of patients. Under this head is included a draft of proposed legislation for commitment from the District of Columbia, along with certain changes in the legislation with reference to the transfer of Federal prisoners to the hospital. (*b*) The advisability of continuing in the hospital patients committed from the District of Columbia and from the Army and Navy and from distant points. Under this head is discussed the whole question of the future policy of the hospital with reference to the commitment of patients from distant points. (*c*) The policy to be adopted relating to the growth of the institution, and the matter of additional lands, buildings, equipment, etc. Here the questions of administration, size of the institution, and its physical needs are discussed, together with a special report as to the care of the criminal insane. (*d*) The present conduct of the institution, including recommendations for improvement of the service and the advancement of the interests of the inmates. Under the

third section the needs of the hospital are set forth. The recommendations contained in this report are commended to the further consideration of Congress.

FREEDMEN'S HOSPITAL.

Movements of population.—There were admitted to the hospital during the year 3,208 patients, including 264 births. These, with 213 remaining from the preceding year, make a total of 3,421 indoor patients receiving the benefits of the hospital, a decrease of 140 over the previous fiscal year. Of those received during the year 1,791 were chargeable to the District of Columbia, 1,246 to the General Government, and 171 paid for their care and treatment.

There were discharged during the year 3,230 patients, of whom 1,471 had recovered, 1,253 improved, 243 unimproved, 18 not treated, and 245 died, leaving 191 in the hospital at the close of the year, 93 of whom were District of Columbia patients, 86 United States patients, and 12 paid patients. The percentage of deaths from all causes was a little over 7 per cent. Eliminating the premature births and moribund cases, the percentage of deaths would be a little less than 4 per cent of the cases under care. The surgical work involved 1,667 operations, as against 1,922 the previous year, but the major cases were more than doubled, taxing the operating facilities almost to the limit.

Training school for nurses.—The training school for nurses has completed its nineteenth year of work and is represented by 240 graduates. These women are engaged successfully in private nursing and in institutional work in various parts of the country. At the graduating exercises held on May 8, 1913, 17 nurses received diplomas. The nurses' home was occupied February 5, 1913, and has added much to the comfort and health of the nurses.

Pay patients.—In the act "making appropriations to provide for the expenses of the District of Columbia for the fiscal year ending June 30, 1913, and for other purposes," approved June 26, 1912, provision is made, under the head of "Medical charities," as follows:

Hereafter patients may be admitted to Freedmen's Hospital for care and treatment on the payment of such reasonable charges therefor as the Secretary of the Interior shall prescribe. All money so collected shall be paid into the Treasury to the credit of Freedmen's Hospital, to be disbursed under the supervision of the Secretary of the Interior for subsistence, fuel and light, clothing, bedding, forage, medicine, medical and surgical supplies, surgical instruments, repairs, furniture, and other absolutely necessary expenses incident to the management of the hospital, a report as to the expenditure thereof to be made annually to Congress.

Under this provision the hospital has received a class of patients who have for many years sought the benefits of its care and treatment, 171 being received for treatment during this, the first year of

its operation. The receipts for the care and treatment of this class of patients amounted to \$3,229.50, and the expenditures in this connection amounted to \$3,018.14, leaving an unexpended balance of \$211.36.

Account with the District of Columbia.—The account with the Board of Charities of the District of Columbia, under the various contracts made for the care and treatment of the District indigent from 1906 to 1913, shows a total unpaid balance up to June 30, 1913, of \$82,419.47. The attention of the Commissioners of the District of Columbia having been called to the fact that the appropriation of \$34,000 for the care of indigent at this hospital was not sufficient to cover the number admitted under the contract with the Board of Charities, they submitted an estimate to Congress in the sum of \$38,000 for this purpose, but only \$34,000 was appropriated. The bills rendered the District of Columbia during the last year for care and treatment of this class of patients amounted to \$37,673.90, or \$3,673.90 more than the appropriation made for the purpose.

Property of deceased patients.—Under existing law and the regulations governing the hospital, the valuables and effects of patients who die in the hospital are turned over to their heirs or legal representatives, but where the latter can not be located it is necessary to retain the same at the hospital. In order to relieve the hospital of the care of such property, appropriate legislation should be enacted by Congress authorizing the disposition thereof.

HOWARD UNIVERSITY.

The university was incorporated by the act of March 2, 1867 (14 Stat., 338). The object of the incorporation, named in the first section of the act, was "for the education of youth in the liberal arts and sciences." The act declares the incorporators to be "a body politic and corporate, with perpetual succession," etc. The management and control of the institution were vested in a board of 17 trustees. The incorporators and their successors were authorized to take for the university property of any character "by gift, devise, grant, donation, bargain, sale, conveyance, assurance, or will;" to transfer or lease any of the property of the university; and to place at interest, in such manner as a majority of the incorporators or their successors should determine, any funds belonging to the university. The incorporators were also given the general powers usually conferred on corporations with reference to the right to sue and be sued in any courts of law and equity in actions of any character. Congress, however, reserved the right to alter, amend, or repeal the act of incorporation.

Students.—There were in attendance during the year 1,453 students from 37 States and 9 foreign countries. This number does not include 37 students who took work in the school of theology by correspondence. The number of students in the different departments was as follows:

College of arts and sciences.....	303
Teachers' college.....	175
Department of manual arts and applied sciences.....	221
Conservatory of music.....	88
Library school.....	2
School of theology.....	108
School of medicine.....	291
School of law.....	105
Academy.....	380
Commercial college.....	110
Total.....	1,783
Names duplicated because of students taking special courses in different departments.....	330
Correct total.....	1,453

It will be seen that this number is an increase over 1912 of 44. Owing to the strict requirements there has been a slight decrease in some other departments, but it is believed that the university will grow rapidly in all departments during the next few years.

Two hundred students completed their studies in the university, as follows:

College of arts and sciences.....	84
Teachers' college.....	24
Normal course.....	7
Kindergarten.....	1
Department of manual arts and applied sciences.....	4
Conservatory of music.....	2
School of theology.....	21
School of medicine.....	21
School of dentistry.....	21
School of pharmacy.....	9
School of law.....	24
Academy.....	29
Commercial college.....	3
Total.....	200

This is a decrease of 18 as compared with the number of students who completed the various courses last year.

School of theology.—The school of theology does not receive aid from Congress, but is supported entirely through endowments and special gifts. It requires no doctrinal tests, is interdenominational, and is open for all who are preparing for moral and religious work.

Appropriations.—While the institution was established in 1867, no appropriation was made by Congress for its support until March 3, 1879, when \$10,000 was appropriated "for maintenance." From that date to June 30, 1913, Congress has appropriated for the university a total of \$1,579,340.

Property.—The treasurer of the institution, in a report dated November 3, 1913, says the total value of all property belonging to the university on that date was \$1,682,456.77, of which \$397,208.15 represents endowments and unproductive land fund. The remainder of the property belonging to the university, valued at \$1,285,248.62, consists of land, \$611,191.50; buildings, \$547,241.71; and equipment, \$126,815.41. The total amount appropriated by Congress, plus the endowments and unproductive land fund, is \$1,976,548.15, and although the annual congressional appropriations have been chiefly for the payment of salaries, the purchase of supplies, erection of and repairs to buildings, care of grounds, and other current expenses, the property of the university is now worth within \$294,091.38 of the sum of all the appropriations, endowments, and unproductive land fund.

The Government has no representative on the board of trustees of the university and has no title to buildings erected or improvements made to buildings from congressional appropriation.

In the annual report for last year and the prior year the Secretary of the Interior, in discussing this subject, stated:

Considering the magnitude of the appropriations made by Congress for the maintenance, improvement, etc., of the university, and the statement of the president thereof, it is manifest that the Government should have greater supervision over the institution, and it is therefore recommended that the act of incorporation of March 2, 1867, be so amended as to give the Government a proper representation on the board of trustees, that appropriations made by Congress shall be expended under the direction of the Secretary of the Interior, and that the institution be required to protect the United States against possible transfer or loss of the lands upon which buildings have heretofore or may hereafter be erected from funds provided by the Government.

COLUMBIA INSTITUTION FOR THE DEAF.

The number of pupils and students in the institution July 1, 1912, was 92; admitted during the year, 39; admitted for the school year 1913-14, 50; total 181. From July 1, 1912, to July 1, 1913, there were under instruction 72 males and 59 females, a total of 131, of whom 77 have been in the collegiate department, representing 24 States, the District of Columbia, and Canada, and 54 in the primary department. Of these, 38 were admitted as beneficiaries of the District of Columbia. During the fiscal year 27 were discharged from the institution by graduation and otherwise.

Excellent health has prevailed during the year among the students and pupils.

The course of instruction has been carried out as reported last year, with increased attention to agriculture, dairying, and chemistry.

Receipts and expenditures.

Balance on hand July 1, 1912.....	\$1, 262. 65
Receipts from United States appropriation.....	83, 593. 96
Receipts from tuition.....	6, 015. 00
Sundry receipts.....	1, 895. 24
Total receipts.....	92, 766. 75
Total expenditures.....	92, 301. 11
Cash on hand July 1, 1913.....	465. 64

An investigation of the occupations of the 355 young men and women graduated from the collegiate department shows about 30 per cent engaged in the profession of teaching. A considerable number are employed in the United States civil service. Others are engaged as editors or publishers, chemists, architects, printers, missionaries to the deaf, and as farmers.

At the Tenth Conference of Superintendents and Principals of American Schools for the Deaf, held at the Indiana School for the Deaf June 27 to July 1, 1913, Columbia Institution was represented by President Hall, Vice President Fay, and Prof. Day.

At the close of the year the degree of master of arts was conferred on four graduates of the normal department, that of bachelor of arts on seven students of the collegiate department, and the degree of bachelor of philosophy on two students.

The department has no supervision over the expenditures of the appropriation made by Congress or general supervision over the administration of the affairs of the Columbia Institution for the Deaf. The only duty devolving upon the Secretary of the Interior in relation to this institution at this time is the reception of the annual report thereof and the admission of indigent deaf-mutes of the several States and Territories to that institution for instruction in the collegiate branch thereof. Legislation should be enacted by Congress placing the control and maintenance of the Columbia Institution for the Deaf under the president and board of directors thereof and requiring them to report directly to Congress as to the administration of the institution.

MARYLAND SCHOOL FOR THE BLIND.

Section 2 of the act of Congress approved May 29, 1858 (11 Stat., 294), authorizes the Secretary of the Interior to place for instruction in an institution for the blind, in the State of Maryland or some

other State, the indigent blind children of teachable age who are children of persons actually engaged in the military and naval services of the United States. No permits for this class of beneficiaries were issued during the past year.

SUPERINTENDENT OF THE UNITED STATES CAPITOL BUILDING AND GROUNDS.

Capitol Building.—The Superintendent of the United States Capitol Building and Grounds, in his annual report of the operations of his office, states that the most important work done in the Capitol during the last fiscal year was the changing of the seating of the Hall of the House of Representatives by substituting for desks roomy chairs, arranged in sections in semicircular form, with suitable aisles but without writing facilities. The change involved the entire rearrangement of the divisions of risers of the old floor, and was almost equivalent to building an entire new floor in the Hall.

Under the act of August 24, 1912, provision was made for substituting marble pedestals for the wooden pedestals supporting the busts of Vice Presidents in the Senate wing. A contract was entered into and the work has been partly completed; the final installation will be made about September, 1914. Partitions of mahogany and white wood were erected in two committee rooms, and other committee rooms were decorated and painted. Crystal chandeliers and brackets were installed and other general repairs made in the Senate wing. In the House wing committee rooms were painted and decorated, crystal chandeliers, and brackets were installed and other general repairs made. The large iron tanks in the attic of this wing, which formerly were sources of water supply to the upper stories, have been removed, the present high-pressure service furnished by the District of Columbia being ample to supply the upper stories of the Capitol. Considerable work has been done in the central building in the way of general repairs and painting. Under a special appropriation for the purpose, preparations have been completed for the painting of the central portion of the Capitol.

Capitol Grounds.—A large amount of work was necessary in the Capitol Grounds on account of damage to trees and shrubs caused by the severe winter of 1911; several memorial trees were planted in different sections of the grounds.

Other buildings.—In the Senate and House stables and engine house new floors were installed and other necessary repairs made.

In the courthouse, Washington, D. C., the usual routine and general repairs have been made; special repairs included remodeling of a portion of the fireproofed attic section of the central portion of the building and providing in this space a fully equipped lunch room.

At the Botanic Garden the superintendent's house has been remodeled and painted, and cement walks laid throughout the garden and general repairs made to the greenhouses and various plant houses.

Considerable work was necessary at the Court of Claims Building on account of bad leaks in the cellar portions of the north and west walls.

Enlarging the Capitol Grounds.—The deficiency act, approved August 26, 1912 (37 Stat., 605), requires the Secretary of the Interior "to rent for such periods and under such terms and conditions as he may deem proper any building, or buildings, or vacant lands," acquired for enlarging the Capitol Grounds under the sundry civil acts of June 25, 1910 (36 Stat., 738), and March 4, 1911 (36 Stat., 1414), until their removal becomes necessary. Under this authority squares 634 and 685 were acquired through condemnation proceedings, on which were located, in all, 92 buildings. On March 11, 1913, the first building turned over to the superintendent was 220 North Capitol Street, and was required for the use of some of the employees of the Senate. Thereafter, as the buildings became vacant, they were turned over to the superintendent by the department, the supervision of the last one being surrendered August 15, 1913. From the time of the surrender of the custody of such buildings up to August 30, 1913, the tenants were allowed to remain as caretakers at a nominal rental, and the moneys derived therefrom were paid to the chief disbursing clerk of the Interior Department.

The act of March 4, 1913, appropriated \$35,000 for the expense of removing said buildings, the work to be done under the supervision of the superintendent. The buildings were advertised and sold on August 16, 1913, to Hugh J. Phillips, of Washington, D. C., for the sum of \$7,333.13, he to remove the same and clean up the débris. Mr. Phillips did not formally take possession of the buildings until September 10, 1913, from which date he is allowed 90 days in which to raze the buildings and remove the material.

The act of Congress approved June 23, 1913 (Public, No. 3), is in part as follows:

Enlarging the Capitol Grounds: To complete the acquisition of squares numbered six hundred and thirty-two, six hundred and eighty, six hundred and eighty-one, six hundred and eighty-two, six hundred and eighty-three, six hundred and eighty-four, seven hundred and twenty-one, seven hundred and twenty-two, seven hundred and twenty-three, and all that part of square numbered six hundred and thirty-three lying east of Arthur Place, provided for by the act entitled "An act making appropriations for the sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes," the sum necessary, in addition to sums already appropriated, to pay the amounts awarded by court commission under the statute, \$2,823,972.35.

The act of June 25, 1910, being the first act authorizing the condemnation of the squares herein mentioned, provides that the proceedings shall be in accordance with the provisions of the act of August 30, 1890 (26 Stat., 412), which declares that when the report of the commissioners appointed to appraise the value of the property "shall have been confirmed by the court the President of the United States shall, if he think the public interest requires it, cause payment to be made to the respective persons entitled according to the judgment of the court," etc.

The report of the commissioners who condemned the $9\frac{1}{2}$ squares mentioned in the act of June 23, 1913, authority for the condemnation being contained in the act of July 25, 1910, was confirmed by the Supreme Court of the District of Columbia on February 24, 1913, and is before the President awaiting his direction that payment be made in accordance with the award.

The appraised value of said $9\frac{1}{2}$ squares is \$3,204,435, and squares 634 and 685 cost the Government \$1,119,036.50, the total value of the $11\frac{1}{2}$ squares, only 2 of which have been paid for—634 and 685—is \$4,323,471.50.

Expenditures.—During the fiscal year ended June 30, 1913, the expenditures under various appropriations have been as follows: Capitol Building and repairs, \$37,225; improving Capitol Grounds, \$30,000; Capitol power plant, \$173,923.50; engine house and Senate and House stables, \$1,500; and repairs to courthouse, District of Columbia, \$5,000.

GENERAL EDUCATION BOARD.

This corporation, which was created by the act of Congress approved January 12, 1903, section 6 of which requires the corporation to annually file with the Secretary of the Interior a report, in writing, stating in detail the property, real and personal, held by the corporation and the expenditure or other use or disposition of the same, or the income thereof during the preceding year, has for its object the promotion of education within the United States. The corporation owns no real estate, its property consisting of securities and money divided into various funds, according to the purpose for which it is to be used.

On June 30, 1913, the principal funds belonging without restriction to the board amounted to \$32,785,399.83, invested as follows: Bonds, \$16,131,266.43; stocks, \$16,643,847.02; cash, \$10,286.38.

The income from the above funds, together with the income from undisbursed income, including income earned but not received, and a gain on securities sold of \$3,289.63, amounted during the year to

\$2,257,583.70. The balance of income from previous years as of June 30, 1912, amounting to \$4,903,802.83, increased the total to \$7,161,386.53.

Disbursements from income during the year were as follows:

Disbursements, General Education Board.

Payments on account of appropriations to colleges, universities, etc-----	\$1, 267, 190. 08
Payments on account of appropriations for farmers' cooperative demonstration work carried on by the United States Department of Agriculture-----	139, 728. 00
Payments made on account of appropriations for salaries and expenses of professors of secondary education in Southern States-----	30, 975. 00
Payments made on account of appropriations for salaries and expenses of negro rural school supervisors-----	8, 886. 35
Payments made on account of appropriations for salaries and expenses of the rural organization service-----	2, 561. 67
Payments made on account of appropriations for conference expenses-----	2, 063. 13
Expenses-----	33, 304. 29
Total-----	1, 484, 708. 52

This leaves an undisbursed balance of income on June 30, 1913, of \$5,676,678.01. It is invested as follows: Bonds, \$4,016,217.79; stocks, \$1,189,316.35; income receivable, \$258,853.41; accounts receivable, \$2,335.53; cash, \$209,954.93.

It should be noted, however, that against this balance there are unpaid appropriations amounting to \$4,662,459.95.

The John D. Rockefeller special fund is a fund which Mr. Rockefeller controls as to principal and income.

In a previous report a gift to the University of Chicago of \$9,912,540.74 was published. One-tenth of this gift (or securities and cash representing it) is payable each year. The income from the unpaid balance, however, remains the property of the board, subject to Mr. Rockefeller's direction. This accounts for the disparity between the balance of the John D. Rockefeller special fund and the income account of the same name. On June 30, 1912, the principal fund amounted to \$1,002,150.25. Gains on securities sold were \$2,781.97, making a total of \$1,004,932.22. Of this \$630,935 was given to the Rockefeller Institute for Medical Research, leaving a balance on June 30, 1913, of \$373,997.22, invested as follows: Bonds, \$300,237.50; stocks, \$69,833.32; cash, \$3,926.40.

The income earned during the year was \$423,168.79, the balance from previous years (\$961,625.63) increasing the amount to \$1,384,794.42.

Disbursements during the year were as follows:

Gift to the Rockefeller Institute for Medical Research-----	\$615, 294. 77
Gift to the University of Chicago-----	20, 000. 00
Expenses -----	1, 347. 02
Total -----	636, 641. 79

This leaves a balance of \$748,152.63, which is invested as follows: Bonds, \$374,497.96; stocks, \$230,162.23; income receivable, \$77,985.66; cash, \$65,506.78.

The Anna T. Jeanes fund, the income to be used for negro rural schools, amounts to \$200,000. It is invested as follows: Bonds, \$182,877.51; stocks, \$16,645; cash, \$477.49.

The income from this fund during the year was \$9,322.21. Added to the balance from the previous year the total available income amounted to \$19,104.74. Of this \$11,412 was appropriated and paid to various schools and \$26 paid out for expenses, leaving a balance of \$7,666.74, all in cash.

MARITIME CANAL COMPANY OF NICARAGUA.

Section 6 of the act of Congress approved February 20, 1889, entitled "An act to incorporate the Maritime Canal Company of Nicaragua" (25 Stat., 675), provides:

Said company shall make a report on the first Monday of December in each year to the Secretary of the Interior, which shall be duly verified on oath by the president and secretary thereof, giving such detailed statement of its affairs and of its assets and liabilities as may be required by the Secretary of the Interior, and any willfully false statement so made shall be deemed perjury and punishable as such. And it shall be the duty of the Secretary of the Interior to require such annual statement and to prescribe the form thereof and the particulars to be given thereby.

The report of this corporation has been duly transmitted to Congress. In view of the fact, however, that the Maritime Canal Company of Nicaragua has no relations whatever with this department, and the Secretary has no duty to perform thereto except as specified in the above-mentioned law, the act should be so amended as to require the corporation to submit directly to Congress such form of report as it may prescribe.

APPENDIX A.

Land classification and withdrawals.

Land classification, with progress of coal classification and valuation.

STATUS ON JULY 1, 1912.

State.	Withdrawals outstanding.	Coal lands classified.	Valuation.	Valuation at minimum price.
	<i>Acres.</i>	<i>Acres.</i>		
Alaska.....	(¹)			
Arkansas.....		60,715	\$1,473,762	\$1,214,280
Arizona.....	118,718			
California.....	239,903	7,720	585,086	154,404
Colorado.....	8,245,063	2,880,215	168,374,600	50,435,309
Idaho.....	1,566,918			
Montana.....	17,642,291	4,171,995	105,320,836	86,507,003
Nevada.....	92,141			
New Mexico.....	5,750,440	954,052	21,280,162	13,520,352
North Dakota.....	18,454,410	230,814	4,584,255	4,584,255
Oregon.....	3,521	1,897	49,909	37,919
South Dakota.....	866,809	82,217	831,270	831,270
Utah.....	6,364,783	670,306	38,323,582	8,678,513
Washington.....	2,206,190	40	2,000	800
Wyoming.....	6,664,302	7,179,474	382,221,890	110,432,145
Total.....	68,215,489	16,239,445	723,047,362	276,396,250

STATUS ON JULY 1, 1913.

Alaska.....	(¹)			
Arkansas.....		60,715	\$1,473,762	\$1,214,280
Arizona.....	118,718			
California.....	239,903	7,720	585,086	154,404
Colorado.....	5,037,721	2,844,202	167,888,247	49,715,086
Idaho.....	391,786	2,113	51,824	42,260
Montana.....	16,051,915	4,550,945	111,127,826	92,313,993
Nevada.....	83,833	5,880	117,600	117,600
New Mexico.....	5,738,847	953,772	21,274,562	13,514,752
North Dakota.....	15,921,287	1,775,497	30,670,925	30,670,925
Oregon.....	26,561	1,897	49,909	37,919
South Dakota.....		249,897	2,756,427	2,756,427
Utah.....	6,431,963	670,272	38,320,001	8,677,373
Washington.....	2,206,030	40	2,000	800
Wyoming.....	6,615,221	7,180,509	382,207,101	110,449,245
Total.....	58,863,785	18,303,459	756,525,270	309,665,964

STATUS ON DEC. 4, 1913.

Alaska.....	(¹)			
Arkansas.....		60,715	\$1,473,762	\$1,214,280
Arizona.....	118,718			
California.....	239,903	7,720	585,086	154,404
Colorado.....	5,037,441	2,844,482	167,904,887	49,717,886
Idaho.....	391,786	2,113	51,824	42,260
Montana.....	15,283,723	4,642,662	114,171,786	93,584,129
Nevada.....	83,833	5,880	117,600	117,600
New Mexico.....	5,641,648	952,041	21,192,357	13,480,132
North Dakota.....	15,274,744	1,941,847	32,487,575	32,487,575
Oregon.....	26,561	1,897	49,909	37,919
South Dakota.....		249,897	2,756,427	2,756,427
Utah.....	6,310,861	687,787	39,167,937	9,024,903
Washington.....	1,718,802	40	2,000	800
Wyoming.....	6,188,390	7,485,676	386,248,961	113,551,777
Total.....	56,316,410	18,882,757	766,210,111	316,170,092

¹ Blanket withdrawal, area unknown.

Oil-land withdrawals and restorations.

State.	With- drawals outstand- ing July 1, 1912.	Fiscal year ended June 30, 1913.		With- drawals outstand- ing July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		With- drawals outstand- ing Dec. 4, 1913.
		With- drawals.	Restora- tions.		With- drawals.	Restora- tions.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....	230,400			230,400			230,400
California.....	1,616,011		227,931	1,388,080	50,415		1,438,495
Colorado.....	87,474			87,474			87,474
Louisiana.....	414,720			414,720			414,720
Oregon.....	74,849		74,849				
Utah.....	1,952,326			1,952,326			1,952,326
Wyoming.....	398,402	124,736		523,138		320	522,818
Total.....	4,774,182	124,736	302,780	4,596,138	50,415	320	4,646,233

Petroleum naval reserves Nos. 1 and 2 contain 68,249 acres included in outstanding petroleum withdrawals in California.

Phosphate-land withdrawals and restoration.

State.	With- drawals outstand- ing July 1, 1912.	Fiscal year ended June 30, 1913.		With- drawals outstand- ing July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		With- drawals outstand- ing Dec. 4, 1913.
		With- drawals.	Restora- tions.		With- drawals.	Restora- tions.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Florida.....	35,640	84,817		120,457		80	120,377
Idaho.....	1,058,056		141,287	916,769	84,507		1,001,276
Montana.....	274,861			274,861	18,517	134,541	158,837
Utah.....	107,745			107,746		71,552	36,193
Wyoming.....	1,864,259	10,383	371,918	1,502,724	51,264		1,553,988
Total.....	3,340,561	95,200	513,205	2,922,556	154,288	206,173	2,870,671

Mineral-land withdrawals and restorations.

State.	With- drawals outstand- ing July 1, 1912.	Fiscal year ended June 30, 1913.		With- drawals outstand- ing July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		With- drawals outstand- ing Dec. 4, 1913.
		With- drawals.	Restora- tions.		With- drawals.	Restora- tions.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....		9,787	1,280	8,507			8,507

Potash-land withdrawals and restorations.

State.	With- drawals outstand- ing July 1, 1912.	Fiscal year ended June 30, 1913.		With- drawals outstand- ing July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		With- drawals outstand- ing Dec. 4, 1913.
		With- drawals.	Restora- tions.		With- drawals.	Restora- tions.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
California.....		94,407		94,407			94,407
Nevada.....		39,422		39,422	92,160		131,582
Total.....		133,829		133,829	92,160		225,989

Metalliferous classification.

[Northern Pacific R. R. grant lands, Idaho and Montana.]

	Classified prior to July 1, 1912.	Classified during fiscal year 1912-13.	Classified June 30, 1913.	Classified during pe- riod ended Dec. 1, 1913.	Classified Dec. 1, 1913.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Mineral.....	198,309	20,800	217,109		217,109
Nonmineral.....	249,550	66,770	316,320		316,320
Total.....	448,859	87,570	533,429		533,429

Lands in present and former Indian reservations, Washington and Montana.

	Classified prior to July 1, 1912.	Classified during fiscal year 1912-13.	Classified June 30, 1913.	Classified during pe- riod ended Dec. 4, 1913.	Classified Dec. 4, 1913.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Mineral.....		1,590	1,590	129,195	130,785
Nonmineral.....		1,616,723	1,616,723	259,817	1,876,540
Total.....		1,618,313	1,618,313	389,012	2,007,325

Power-site reserves.

State.	With- drawals outstand- ing July 1, 1912.	Fiscal year ended June 30, 1913.		With- drawals outstand- ing July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		With- drawals outstand- ing Dec. 4, 1913.
		With- drawals.	Restora- tions.		With- drawals.	Restora- tions.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arkansas.....		17,704		17,704			17,704
Arizona.....	192,961		5,730	187,231	3,200		190,431
California.....	165,008	61,733	4,350	222,391	2,934	1,222	224,103
Colorado.....	244,653	10,007	40	254,620	1,440		256,060
Idaho.....	295,457	33,523	37,059	291,921	5,860	16,472	281,309
Minnesota.....	11,254		532	10,722	298		11,020
Montana.....	151,106	1,259	2,465	149,900	28,691	2,338	176,253
Nevada.....	15,295	372		15,667	3,200		18,867
New Mexico.....	14,536		959	13,577			13,577
Oregon.....	184,243	15,567	4,145	195,665	66,400	155	261,910
Utah.....	375,030	1,485		376,515	6,295	4,343	378,467
Washington.....	103,141	3,826	7,469	99,498	2,814	3,722	98,590
Wyoming.....	61,069	7,210	5,285	62,994			62,994
Total.....	1,813,753	152,686	68,034	1,898,405	121,132	28,252	1,991,285

Reservoir site withdrawals and restorations.

State.	With- drawals outstand- ing July 1, 1912.	Fiscal year ended June 30, 1913.		With- drawals outstand- ing July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		With- drawals outstand- ing Dec. 4, 1913.
		With- drawals.	Restora- tions.		With- drawals.	Restora- tions.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....	23,040			23,040			23,040
Montana.....	15,640			15,640			15,640
North Dakota.....	1,569			1,569			1,569
Oregon.....	16,884		6,265	10,619			10,619
South Dakota.....	8,542			8,542			8,542
Washington.....	31,553	4,530		36,083			36,083
Total.....	97,228	4,530	6,265	95,493			95,493

Public water reserves.

State.	With- drawals outstand- ing July 1, 1912.	Fiscal year ended June 30, 1913.		With- drawals outstand- ing July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		With- drawals outstand- ing Dec. 4, 1913.
		With- drawals.	Restora- tions.		With- drawals.	Restora- tions.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....	.....	1,200	.....	1,200	.....	.....	1,200
California.....	.....	94	.....	94	36,330	.....	36,424
Utah.....	23,143	3,160	.....	26,303	166	.....	26,469
Wyoming.....	62,979	.....	.....	62,979	.....	1,468	61,511
Total.....	86,122	4,454	.....	90,576	36,496	1,468	125,604

Enlarged homestead designations.

State.	Acreage designated July 1, 1912.	Fiscal year July 1, 1912, to June 30, 1913.		Acreage designated July 1, 1913.	Period July 1, 1913, to Dec. 4, 1913.		Acreage designated Dec. 4, 1913.
		Designa- tions.	Cancel- lations.		Designa- tions.	Cancel- lations.	
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona.....	26,959,779	.....	.....	26,959,779	302,771	.....	27,262,550
California.....	.....	1,793	.....	1,793	116,590	.....	118,383
Colorado.....	20,365,536	17,181	.....	20,382,717	314,420	.....	20,697,137
Idaho:							
Sections 1-5 only.....	5,424,628	139,973	22,363	5,542,238	555,763	.....	6,098,001
Section 6.....	7,801	7,053	200	14,654	2,270	.....	16,924
Total.....	5,432,429	147,026	22,563	5,556,892	558,033	.....	6,114,925
Montana.....	32,028,776	219,353	646	32,247,483	1,832,518	.....	34,080,001
Nevada.....	49,512,960	.....	9,451	49,503,509	.....	.....	49,503,509
New Mexico.....	16,443,652	1,464,087	.....	17,907,739	149,806	.....	18,057,545
North Dakota.....	.....	130,502	.....	130,502	7,870,696	.....	8,001,198
Oregon.....	11,357,888	160,048	.....	11,517,936	698,200	.....	12,216,136
Utah:							
Sections 1-5 only.....	6,943,671	126,870	4,552	7,065,989	5,694	.....	7,071,683
Section 6.....	1,201,600	17,951	18,865	1,200,686	.....	.....	1,200,686
Total.....	8,145,271	144,821	23,417	8,266,675	5,694	.....	8,272,369
Washington.....	3,402,896	6,001	.....	3,408,897	67,446	.....	3,476,343
Wyoming.....	17,587,973	32,800	.....	17,620,773	83,800	.....	17,704,573
Total.....	191,237,160	2,323,612	56,077	193,504,695	11,999,974	.....	205,504,669

* * * * *

Visitors to national parks, 1906 to 1912.

Name of park.	1906	1907	1908	1909	1910	1911	1912	1913
Yellowstone National Park..	17,182	16,414	19,542	32,545	19,575	23,054	22,970	24,929
Yosemite National Park.....	5,414	7,102	8,850	13,182	13,619	12,530	10,884	13,735
Sequoia National Park.....	700	900	1,251	854	2,407	3,114	2,923	3,823
General Grant National Park.	900	1,100	1,773	793	1,178	2,160	2,240	2,756
Mount Rainier National Park	1,786	2,068	3,511	5,968	8,000	10,306	8,946	13,501
Mesa Verde National Park.....	(1)	(1)	80	165	250	206	230	280
Crater Lake National Park....	1,800	2,600	5,275	4,171	5,000	24,500	5,235	6,253
Wind Cave National Park.....	2,887	2,751	3,171	3,216	3,387	3,887	3,199	3,988
Platt National Park.....	(1)	28,000	26,000	25,000	25,000	30,000	31,000	35,000
Sullys Hill National Park.....	(1)	400	250	190	190	200	200	300
Hot Springs Reservation.....	(1)	(1)	(1)	(1)	120,000	130,000	135,000	135,000
Glacier National Park.....	.....	.....	.....	.....	.....	24,000	6,257	12,138

¹ No record kept.² Estimate.

Location, area, and characteristics of national parks.

Name.	Location.	When established.	Area (acres).	Private lands (acres).	Visitors, 1913.	Special characteristics.
Yellowstone.....	Wyoming, Montana, and Idaho.	Mar. 1, 1872	2,142,720	None.	24,929	Wonderful scenery, geysers, boiling springs, mud volcanoes and springs, mountains, grand waterfalls, brilliant-hued canyons, great lake 8,000 feet above the level of the sea; wild animals.
Yosemite.....	California.....	Oct. 1, 1890	719,622	19,827	13,735	Mountain scenery, magnificent waterfalls, the Hetch Hetchy and Yosemite Valley, ice-sculptured canyons, glacier lakes, forests.
Sequoia.....	do.....	Sept. 25, 1890	161,597	3,710.96	3,323	The home of the "Big Tree" (<i>Sequoia gigantea</i>), growing to a height of 300 feet with a diameter of 30 feet, the bark being 2 feet thick; rugged and picturesque scenery, beautiful cascades and falls, and wonderful caves.
General Grant.....	do.....	Oct. 1, 1890	2,536	160	2,756	Glaciers and wild mountain scenery.
Mount Rainier.....	Washington.....	Mar. 2, 1889	207,350	18.2	13,501	Rugged mountain scenery, beautiful lake within the crater of an extinct volcano, etc.
Crater Lake.....	Oregon.....	May 22, 1902	159,360	2,458.11	6,250	Well known for a cavern having many miles of galleries and numerous chambers of considerable size containing many peculiar formations.
Wind Cave.....	South Dakota.....	Jan. 9, 1903	10,522	160	3,983	Noted for its bromide and other springs, the waters of which have medicinal qualities; park well wooded, scenery picturesque.
Platt.....	Oklahoma.....	July 1, 1902 { Apr. 21, 1904	848.22	None.	135,000	Set aside to preserve the prehistoric ruins of an ancient people; rugged scenery.
Mesa Verde.....	Colorado.....	June 29, 1906	42,376	880	280	Famous for its thermal springs, having wonderful medicinal qualities.
Boundary Changed.....	do.....	June 30, 1913	48,066.4	993	135,000	Famed for its beautiful lakes derived from glaciers, lofty mountains clad with forests, magnificent glacial formations, numberless waterfalls. Game, fish, and birds abound.
Hot Springs Reservation.....	Arkansas.....	June 10, 1880	911.63	None.	12,138	Small rugged hills containing prehistoric ruins. Practically a local park.
Glacier.....	Montana.....	May 11, 1910	981,681	16,668.11	300	These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States. Discovered in ruinous condition in 1694.
Sullys Hill.....	North Dakota.....	Apr. 27, 1904	780	None.	450	
Casa Grande Ruins.....	Arizona.....	Mar. 2, 1889	480	None.		

* Estimated.

REPORT OF THE COMMISSIONER OF THE GENERAL LAND OFFICE.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, D. C., September 25, 1913.

SIR: I have the honor to submit herewith a report of the work in the General Land Office for the fiscal year ended June 30, 1913, together with recommendations for such changes in legislation as seem to be required in the disposal of our public lands and the protection of rights incident thereto.

* * * * *

AREA OF LAND ENTERED AND PATENTED.

The total area of public and Indian lands originally entered and allowed during the fiscal year ended June 30, 1913, is 15,867,222.45 acres, an increase of 1,292,533.63 acres, as compared with the area entered during the year 1912.

The area patented during the fiscal year is 12,678,076 acres, an increase of 2,542,601 acres as compared with the fiscal year 1912; of the above area 7,320,058 acres were patented under the homestead law.

The decrease in receipts and increase in the area disposed of is caused by the decreased number of homestead entries commuted to cash and the increased number on which proof was made under the three-year act of June 6, 1912. The difference of nearly 2,000,000 acres on which commissions only were received instead of the Government price of \$1.25 and \$2.50 per acre would account for the decrease in receipts, and also the fact that the land service no longer collects reclamation water-right charges, these moneys now being collected by the Reclamation Service under the act of August 9, 1912 (37 Stat., 265).

CASH RECEIPTS AND EXPENDITURES.

The total cash receipts from the sales of public lands, including fees and commissions on both original and final entries, for the fiscal year 1913, were \$4,287,540.67. Miscellaneous receipts were as follows: From sales of Indian lands, \$2,118,469.34; reclamation water-right charges, \$274,172.57; depredations on public lands, sales of Government property, and copies of records and plats, etc., \$275,322.23; making the aggregate of cash receipts of this bureau during the fiscal year 1913, \$6,955,504.81, a decrease of \$3,017,543.19 as compared with those for the fiscal year ended June 30, 1912.

The total expenses of district land offices for salaries and commissions of registers and receivers and incidental expenses during the fiscal year ended June 30, 1913, were \$890,474.06, an increase of \$40,353.02. The aggregate expenditures and estimated liabilities of the public-land service, including expenses of district land offices and surveys, were \$3,316,362.30, leaving a net surplus of \$3,639,142.51.

THE FIELD SERVICE.

On August 24, 1912, Congress appropriated the sum of \$500,000 for the "Protection of public lands, timber, etc.," for the fiscal year ending June 30, 1913.

The average number of special agents employed per month under this appropriation during the fiscal year was 137. From this appropriation were also paid the salaries of the clerks to the chiefs of field divisions and the necessary temporary employees in this office to handle properly the work incident to the large number of reports being received from the field.

The total amount of cash collected and turned into the Treasury as a result of the work of the special agents in the field during the fiscal year is \$155,551.76. Of this total amount collected, \$39,559.64 was accepted as settlement for timber trespass and \$15,495.46 for timber sales and \$100,496.66 was recovered by civil and criminal actions brought through the Department of Justice in cases of timber trespass and fines imposed and paid in cases of conspiracy, perjury, etc., and also for compromises of civil suits to vacate patents.

As a result of investigations 815,747.25 acres have been restored to the public domain. Of this total amount restored 325,760 acres represent area of fraudulent entries (taking as an average of 160 acres to each entry) canceled on special agents' reports; 470,397 acres restored to open range on abatement of unlawful inclosures; and 19,590.25 acres were restored through suits to cancel patents fraudulently acquired, brought by the Department of Justice on the recommendation of this office, based on special agents' reports.

Special agents have personally examined and reported on 25,089 entries, 7,967 of which were adverse and 17,122 were favorable. In addition to the reports of special agents, 257 adverse reports and 1,018 favorable reports have been received from forest officers on entries within national forests. Reports on applications for rights of way over the public domain for reservoirs, canals, ditches, etc., were rendered on 104 such applications, 49 of which were adverse and 55 were favorable. Reports have been received on 32 segregation lists under the Carey Act, on which final action has not yet been had.

Fifteen civil suits were recommended for the setting aside of grants of rights of way over the public domain for reservoirs, canals, ditches, etc. Investigations are now in progress involving all such grants heretofore approved for such purposes with a view of bringing civil action against all grantees where the evidence shows misuse, nonconstruction, or abandonment of such privileges.

During the year 118 civil suits were recommended, 233 civil suits have been won, and 56 have been lost; of which 78 timber-trespass cases were won, recovering \$47,810.95, and 15 were lost; 111 suits to vacate patents were won, restoring 19,590.25 acres to the public domain, and cash payments were made in compromises of suits to vacate patents in the sum of \$45,745.41; 38 suits to vacate patents were lost; 30 cases of unlawful inclosures were won, restoring 60,763 acres heretofore held under fence unlawfully.

At the close of the fiscal year 301 cases wherein criminal prosecution was recommended were pending before the Department of Justice.

Of the criminal cases closed during the year, 25 were convictions for timber trespass, of which 1 was prison sentence, and \$2,200 in fines were assessed by the court and \$924 paid; 14 were convictions for conspiracy, 4 of which were prison sentences and \$23,250 assessed in fines, of which \$5,250 was paid; 2 convictions of unlawful inclosures of the public domain, \$26.30 fines imposed and paid; 9 convictions were secured in cases of using the mails to defraud, etc., prison sentences in 4 cases, fines of \$1,201 imposed, of which \$740 was paid; making a total of 50 convictions secured and 9 prison sentences imposed.

SURVEYING.

Owing to the failure of Congress to provide for surveying the public lands in the latter half of the surveying season of 1912 until August 23, the large number of parties in the field at the end of June, 1912, had to be curtailed to such an extent that the showing as to acreage surveyed during the last fiscal year is not so good as it would otherwise be.

Increased efforts were made at the opening of the 1913 season to secure the execution of all the surveys authorized, and at the end of the last fiscal year 154 parties were at work on the various kinds of surveys under the jurisdiction of this office.

These embrace surveys of public lands, railroad land grants, abandoned military reservations, Indian reservations, town sites, islands, lake beds, and other fragmentary surveys.

The expense of making these surveys has been met by funds derived from the following appropriations: Surveys and resurveys of public lands; deposits from railroad companies; surveying with railroad land grants (reimbursable); surveying and allotting Indian reservations (reimbursable); surveys of abandoned military reservations.

This office has formulated a plan of procedure for the surveys of homesteads within national forests, which has been adopted by the Forester, and the instructions printed in pamphlet form for the guidance of its surveyors. These irregular tracts, listed by the forest officers, will be surveyed by metes and bounds, whether on unsurveyed or surveyed ground, under the supervision of the surveyor general, and the expense of the field and office work of the segregation will be hereafter borne by the Government instead of by the entrymen.

The third season of field operations under the direct system has fully demonstrated the wisdom of abandoning the contract system. The organization has been completed by the addition of skilled surveyors drawn from Civil Service Commission registers, and with the cooperation of the surveyors general the disbursements for expenses have been conducted in such a manner that no wastefulness or extravagance is allowed. Efficiency as well as economy is the result. The graded system of salaries adopted has tended to induce surveyors and transimen to give their best service and to minimize the cost. Progress reports submitted weekly enable the supervisors of surveys and the assistant supervisors to keep a record of progress so that no time is lost by failure to make proper assignments during the surveying season.

A detailed statement of the acreage of surveys accepted by this office is shown in another part of this report. It exhibits the areas

returned as surveyed in each district. There is an increase of 900,000 acres in the total of virgin surveys over that of last year, which, added to the area of lands resurveyed during the year, indicates an output of 10,250,000, an excess over 1912 of about two and one-half million acres of accepted surveys. If the production is counted by the surveying season instead of by the fiscal year, the increased activity in surveying operations during 1913 will, it is estimated, result in an aggregate of 15,000,000 acres, which may safely be predicted the record for recent years and a high-water mark for surveys under the direct system.

In the appendix will be found a copy of the annual instructions issued to the surveyors general based on the annual appropriations for the surveying service.

RESURVEYS.

The public-land surveys, prior to the nineties, were not inspected by examiners directly reporting to this office, and prior to the eighties, were not examined in the field, consequently the surveys of many million acres, which were returned as surveyed, were found, upon settlement, to be fraudulently executed, or grossly in error.

In prairie States, such as Nebraska and eastern Colorado, the surveys were attempted and corners or exteriors established, but the subdivisional corners were carelessly planted or omitted. In the very early surveys—those of lands in Iowa, Illinois, Michigan, Wisconsin, and others in the Middle West—the Government surveyors made their surveys conscientiously for the most part and as correctly as their limited facilities and crude methods would allow.

The result has been that in Colorado, Nebraska, Wyoming, and California there is an extensive demand for resurveys, especially as it involves the reestablishment of corners with tubular iron posts having brass caps and flanged at bottom to prevent withdrawal.

In some cases Congress has authorized certain townships to be resurveyed by special acts, and the survey of several hundred townships have been thus ordered subject to certain conditions such as a prior ascertainment by the department as to the extent of obliteration, and the amount of alienation by the Government.

Congress March 3, 1909, enacted a law providing for resurveys in the discretion of the department upon petition, under which law this office has allowed the survey of a considerable number of townships besides those directly authorized by Congress.

Two methods are employed by this office in this work—the dependent and independent. The former, which is followed almost exclusively in Nebraska, provides for a thorough examination for evidences of original corners (which in this State consisted quite universally, because cheaper to construct, of pits and mounds of earth, instead of wooden posts or stones) upon standard lines, and after ascertainment of these, the minor lines and corners are restored by proportionate measurement. Where traces of corners are discovered this appears to be the most valid and equitable plan, for it is true restoration or resurvey.

The independent, or metes-and-bounds method is, however, better adapted to conditions in mountain States and wherever there has been complete disregard of manual requirements.

It consists of segregating every claim of record by running new section lines independently, as in virgin country, disregarding any evidences of original corners except on standard lines. The boundaries of all claims are closed upon, and each claimant points out his improvements to the surveyor, who surveys out the acreage expressed in his entry, and thus segregates all disposals by metes and bounds. The disputes as to claim lines among adjoining owners are settled before the surveyor leaves the ground. The public land remaining in fractional subdivisions is lotted for future disposition. In this method the claimant receives iron posts for all the corners of his land, and the tracts are numbered consecutively from "Tract No. 37" up.

The dependent method secures for the claimant the same description as his original entry or patent calls for, but gives him only the section-line corners. If his claim be completely inside the section, he receives no corner markings and must again rely upon a local surveyor to locate him according to the resurvey.

By the independent method this 160-acre homestead e. g., SW. $\frac{1}{4}$ NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ SW. $\frac{1}{4}$, and NW. $\frac{1}{4}$ SE. $\frac{1}{4}$, becomes, e. g., "Tract No. 42" and has each of the four corners monumented by the Government.

It has been difficult to issue instructions to the surveyor when he takes the field which will adequately provide for all contingencies, and in the most recent resurveys in sparsely settled country it has been deemed advisable to instruct the surveyor to govern himself as to methods by the conditions he finds existing on the ground. If the boundaries of patented claims have been so erroneously located by county or private surveyors that the claimants' improvements will be thrown a considerable distance from the points where the Government restoration would put them, or if the restoration would distort the sections into irregular shapes and depart too much from rectangularity, the resurveying surveyor will resort to the independent method as subserving the best interests of the settlers and the Government in future disposals.

STATE BOUNDARIES.

Texas-New Mexico.—The reestablishment of the old (1856) Clark boundary line between Texas and New Mexico, has, since my last report, been signed by the commissioners on the part of the Government and the State of Texas and approved by the President. The prompt and economical restoration of this line monumented with enduring and conspicuous mile corners and concrete pillars has demonstrated the efficiency of the field organization.

East boundary of California.—It is highly important that the oblique boundary between California and Nevada be properly monumented and the lines of public-land surveys be closed thereon.

It extends from Lake Tahoe to the Colorado River, a distance of 405 miles. It was originally run by Alexander von Schmidt, in 1873, who died before it was completed, and although his son and successor attempted to finish it, the line was left in a defective condition for many years. The public-land lines were supposed to be closed to the line, both in Nevada and California, but it is believed that the surveyor in nearly all instances closed to a fictitious retracement of the Von Schmidt line in order to complete the record of the subdivision of each township under the mileage system. No demand

for land in the arid region traversed by the boundary existed for several decades, and the line was left in this condition until the Coast and Geodetic Survey obtained permission from Congress to locate points for the true position, and in 1899 this was accomplished. Stations at irregular intervals were marked and witnessed so that the line could be identified, but no attempt was made to erect the usual mile corner monuments or to close the public-land survey lines to the true line. Since the legislatures of both States have adopted the location made by the Coast and Geodetic Survey and the land along the line is becoming more valuable, I am of the opinion that the boundary should be monumented as are other State boundaries and a readjustment of the official land surveys by proper ties thereto be provided for by the special appropriation submitted. Otherwise great confusion and uncertainty of titles will ensue. It is estimated that this will cost \$33,000.

South boundary of Colorado.—Congress provided in the act of July 1, 1902, for the resurvey of this boundary, and it was contracted for in 1902 and the work accepted in 1904. Being coincident with the thirty-seventh parallel of latitude, it was astronomically determined and established in 1869 by E. N. Darling, but the location by him having been found by subsequent observations to be questionable, an astronomer detailed from this office was empowered to assist the contracting engineer in making the ascertainment by the most modern scientific methods. The result placed the new line at considerable distance away from the other. The old Darling line corners were destroyed and the new line, properly monumented with mile corners, has been accepted by this office as properly coincident with the thirty-seventh parallel or as nearly so as the modern astronomical appliances and the most careful determination by experienced observers will permit. Opposition, however, has developed on the part of one of the interested States to adopting the new boundary, owing to its loss of a portion of its territory, and as nothing has been done as to congressional confirmation the boundary remains on the ground, suitably marked but unused, and all conveyances of public land adjoining are referable to plats showing the old boundary, although no longer existing on the ground.

This new boundary should be either confirmed in its present location by Congress or the latter should provide legislation looking to the appointment of commissioners on the part of each State and the Government to settle the question of location, at the same time authorizing the closing of the public-land lines to the corrected boundary, together with the construction of supplemental plats for the purpose of properly describing the tracts of land still in Government ownership which are affected by the change.

Oregon-California.—From holders of homesteads and mining claims in the mountainous part of the boundary between Oregon and California complaints have been received that the plats of survey do not represent the actual state of the tracts. At one region it has been shown that a township survey under a California contract was carried some distance into Oregon, so that two boundaries are asserted. Instructions have been issued recently for a retracement of some of these lines with a view to constructing revised plats, but it is not certain that the remedy will be satisfactory or will comprehend all the irregularities that should be finally settled. The case will re-

quire a thorough study of the records of the original and secondary survey of the boundary, and when that line is settled there remains the duty of correcting the adjacent section lines and areas. A retracement and remarking of the entire boundary should be authorized and provided for by Congress.

Wyoming boundaries.—Frequent complaints have arisen in regard to the extensive obliteration of monuments established many years ago on the north, west, and south boundaries of Wyoming. They were generally of wooden posts, and these have been burned off by forest fires or decayed, so that, as stated by the surveyor general of Wyoming, all the monuments for many miles have been entirely destroyed. He recommends the complete re-marking of these boundaries by stone monoliths or iron posts in the same manner as the east boundary of the State was reestablished in 1908, the expense of which was provided by Congress in a special appropriation. He also calls attention to an error in the location of the north boundary developed by the closing of public-land surveys thereon, amounting to about half a mile in a distance of 50 miles of the boundary. The surveyor general recommends an appropriation for the remaining Wyoming boundaries of \$100,000, which is at the rate of \$100 per mile and would permit the employment of granite monoliths at mile intervals.

"SUNK LANDS" AND "LAKE LANDS" IN ARKANSAS.

The work entailed upon the surveying service by the decisions of the department asserting title to the "sunk lands" and "lake lands" has been vigorously prosecuted, both in the field and in the office.

The survey, field notes, and plats of the so-called "Buford, Clear, Flat, Grassy, and Walkers Lakes," in Mississippi County, Ark., aggregating 12,038 acres of "lake lands," were approved on September 23, 1912, and opened to entry on November 16, 1912. Practically all of the foregoing and the following lands opened to entry were immediately filed upon.

During the year the returns of the survey of seven fractional townships of the so-called "sunk lands" of the St. Francis River and of the right-hand chute of Little River, in Craighead and Poinsett Counties, Ark., aggregating 41,111 acres of sunk lands, were received from the surveyors. Of the foregoing the survey, field notes, and plat of one township, comprising all of the sunk lands of the right-hand chute of Little River, 5,638 acres, and 1,420 acres of the sunk lands of the St. Francis River, were approved on April 25, 1913, and opened to entry on July 2, 1913. The survey, field notes, and plats of two additional townships, comprising 18,711 acres of the St. Francis River sunk lands, are so nearly completed as to insure their approval during July, 1913, when the plats will be immediately filed in the local land office. The returns of the remaining four fractional townships are in course of examination at the present time.

Field work was resumed in October, 1912, the surveyors taking up the so-called "Carson, Hickory, and Tyronza Lakes," which were completed by the last of November. The parties then took up their final work in the northern portion of the St. Francis River sunk lands and made good progress until again driven out by high water in January, 1913.

On May 13, 1913, this office decided, with the approval of the First Assistant Secretary, that the so-called "Campbell's Oldfield Lake" should have been included in the survey of Grassy Lake. The survey was ordered to be immediately executed, and was completed on May 22, 1913. The returns of the foregoing surveys have all been received. The returns of surveys of the so-called "Carson, Hickory, Tyronza, and Campbell's Oldfield Lakes" are now in course of examination, and are complete without additional field work. The balance of the field work in the northern portion of the St. Francis River sunk lands will be completed in October and November, 1913, it is believed, which will dispose of all this class of surveys as yet authorized.

* * * * *

DESERT-LAND ENTRIES.

During the fiscal year ended June 30, 1913, 2,328 desert-land entries were disposed of by approval, an increase of about 100 over the preceding year.

The most difficult question arising in connection with the adjudication of desert-land claims is that pertaining to water rights. The gradual absorption of the water supply from the smaller streams by the individual entryman naturally resulted in the organization of water companies to bring water from sources remote from the land. Pursuant to departmental instructions all such companies are subjected to careful scrutiny with respect to their resources, liability, and water rights.

A large number of projects, stock or interest in which has been alleged in support of annual proofs and from which water rights have been claimed by desert-land entrymen when making final proof, have been investigated and reported upon by the various chiefs of field divisions. Hearings have been ordered in a number of cases where adverse reports have been received, but so far final decision has not been reached as to any of these projects.

EXTENSION OF DESERT ENTRIES.

Additional time within which to submit final proof in support of desert-land entries may be granted under the provisions of the acts of Congress approved March 28, 1908 (35 Stat., 52), and April 30, 1912 (37 Stat., 106), in cases wherein it is shown that because of unavoidable delay in the construction of the irrigating works intended to convey water to the land the necessary proof of reclamation and cultivation can not be made within the statutory period of four years from date of entry.

Cases involving great hardship are constantly coming before the office wherein, for reasons other than that mentioned, it is believed that additional time should be granted. It is recommended, therefore, that, under regulations approved by the Secretary of the Interior, authority be given to grant additional time to desert-land entrymen who, without fault, fraud, or negligence on their part are unable, for any good and sufficient reason, to make the necessary proof of reclamation and cultivation within the four-year period now prescribed.

SWAMP LANDS.

New claims to swamp lands in places were reported during the year ended June 30, 1913, to the amount only of 7,613.90 acres. This is 68,790.07 acres less than the amount reported during the preceding year. The amount of swamp lands certified and patented was 20,234.32 acres, a decrease of 6,697.83 acres from the area patented during the preceding year. Claims to the amount of 11,713.96 acres were rejected and canceled. Sixty-two swamp-land contests were received and 47 contests against swamp-land claims were decided. There were pending claims to swamp lands in place June 30, 1913, to the amount of 434,110.21 acres.

INDIAN ALLOTMENTS.

During the fiscal year ended June 30, 1913, 5,243 Indian allotments were disposed of by approval, an increase of 3,069 over the preceding year. These were chiefly tribal allotments, though included in the number were a few fourth-section allotments on the public domain, and approximately 400 Turtle Mountain selections under the act of April 21, 1904 (33 Stat., 189).

MINNESOTA STATE DRAINAGE.

The act of Congress approved May 20, 1908 (35 Stat., 169), extended the drainage laws of the State of Minnesota to two classes of public lands of the United States located in said State, namely, lands which are subject to entry and entered lands for which no final certificates have issued. The enforcement of the charges is provided for by authority to sell the lands for amounts due and unpaid, and provision is made for issuing patents in proper cases, the purchaser being required to pay all drainage charges due, as well as land-office fees and commissions, and \$1.25 per acre for the land, or such other price as may have been fixed by law.

The first sale made under the act was held in several counties in Minnesota on May 12, 1913, and a number of tracts were sold. These entries have not yet been reached for action. Several new and interesting questions, involving the qualifications of purchasers, have arisen and these will be duly submitted for departmental consideration.

* * * * *

STATE SELECTIONS.

There was a notable increase in the acreage of State selections approved. During the fiscal year ended June 30, 1913, selections were approved under the various State grants to the amount of 598,657.74 acres. This is an increase of 417,377.12 acres over the approvals for the preceding year.

In order to provide for a satisfactory adjustment of their claims to lands within National forests granted, reserved, or pledged in aid of common schools, officials of several of the States have entered into agreements with the Secretary of Agriculture looking, generally, to exchanges of unsurveyed school sections within such forests. Execu-

tive proclamations in furtherance of agreements entered into by officials of South Dakota and Idaho have been issued. The area involved in the South Dakota exchange is not large, while that in Idaho aggregates about 550,000 acres.

The States of Arizona and New Mexico during the past year entered actively upon the selection of lands granted them in the enabling act of June 20, 1910 (36 Stat., 557), upward of 1,400,000 acres having been selected during the year.

LIEU SELECTIONS FOR LANDS IN INDIAN RESERVATIONS.

Under the act of April 21, 1904 (33 Stat., 211)—which provided for an exchange by an owner of private land, over which an Indian reservation has been extended by Executive order, for vacant non-mineral, nontimbered, surveyed public lands of equal area and value and situated in the same State or Territory—applications to select lands in exchange for private lands in the Zuni and Navajo Reservations in New Mexico and the Moqui Indian Reservation in Arizona have been filed to the extent of 651,000 acres. Patents have issued for 362,000 acres. Also deeds to 327,000 acres have been accepted by the Government to lands situated in the Navajo Indian Reservation, Ariz., which are acceptable bases of exchange under the act. New regulations have been adopted under which selectors are required to designate a base for each tract selected, thus rendering easier an examination of the comparative value of the lands selected and the base surrendered therefor, and permitting more readily of eliminations.

ABANDONED MILITARY RESERVATIONS.

During the past spring the lands in the following abandoned military reservations were surveyed: Fort Grant and Date Creek, Ariz., Fort Brown and Fort Ringgold, Tex. These surveys have not yet been approved by this office, but will probably be this fall in time for a sale early next spring. These reservations are subject to disposal under the act of July 5, 1884 (23 Stat., 103). The area to be disposed of is small in each case, and the lands are to be sold under the act at public auction to the highest bidder at not less than the appraised price nor less than \$1.25 per acre.

The act of January 27, 1913 (Public No. 351), provides for the disposal of lands in the Fort Niobrara abandoned military reservation. The lands are to be disposed of to homesteaders, the portion north of the river in 160-acre tracts at an appraised price, and the portion south of the river in 640-acre tracts, as provided in the Kin-kaid Act, without appraisement. There are about 40,000 acres to be disposed of under the act.

It was found necessary to reestablish the old Government survey corners, and this work has been completed. Notices have issued for a registration for these lands, all applications to be presented at Valentine, Nebr., between October 13 and October 25, 1913. Those successful at the drawing will be permitted to make entry, beginning April 1, 1914.

The Fort Assiniboine military reservation, located near Havre, Mont., was turned over to this department in 1911, and a portion of the lands was surveyed last year. In view of the fact that legislation has been pending proposing a special method for disposing of these lands and proposing an appropriation for surveying and classifying the lands, the further survey of the lands was postponed and the lands withdrawn from settlement, location, sale, or entry in aid of said pending legislation. The reservation contains approximately 168,000 acres and was one of the largest military reservations in the United States.

NATIONAL FORESTS.

Since the issuance of the last annual report, 12 national forests have been enlarged and 27 reduced under the act of June 4, 1897 (30 Stat., 36). There are now 163 national forests, embracing 186,616,648 acres. The decrease in area of national forests since the beginning of the fiscal year is 789,728 acres.

During the fiscal year the unappropriated public lands in 1,984,884 acres excluded from national forests have been restored to settlement and entry. Areas temporarily withdrawn for forestry purposes but not needed therefor are released from withdrawal upon the recommendation of the Secretary of Agriculture. Since the issuance of the last annual report 288,581 acres have been released from such withdrawal and the public lands therein opened to settlement and entry.

During the fiscal year 25 stations, embracing 2,122 acres, have been withdrawn by Executive order under the act of June 25, 1910 (36 Stat., 847), for use by the Forest Service in the administration of the national forests, and 52 withdrawals for such purpose have been revoked covering 9,133 acres. There are now 24 rights of way for wagon roads and 3,964 administrative sites withdrawn embracing 563,886 acres—181 sites and 22,496 acres being near, and 3,783 sites and 541,390 acres in, the national forests.

HOMESTEAD ENTRIES IN FOREST RESERVES.

Notices of restoration were issued during the past year in accordance with the provisions of the act of June 11, 1906 (34 Stat., 233), in 3,620 lists, by which approximately 365,000 acres of agricultural lands in national forests were opened to settlement and entry under the homestead laws. Up to June 30, 1913, approximately 1,150,000 acres have been restored under the act of 1906. There are 532 lists now pending action.

Recent legislation provides for the survey by the Forest Service of metes and bounds claims under the act of 1906, without expense to the entryman for field work.

In this connection it seems appropriate to suggest that inasmuch as it is the purpose of the Government to extend the system of rectangular surveys over all the public lands some time it would be practical now to extend such surveys to homesteads in national forests. By this course a duplication of work would be avoided and at the same time the settler would be given a description of the land in his patent that would be much better understood.

The metes and bounds plan of survey is often productive of fantastic boundary lines, which will certainly be productive of much confusion in the delimitation of claims in the event of the exclusion of lands thus surveyed from the exterior boundaries of the national forests.

* * * * *

CAREY ACT.

The past year in the Carey Act work, so called, has been the most satisfactory in the history of the administration of this act. This statement is based, not so much on the mere concrete results attained, as upon the fact that the general feeling as between the various interested States and the Government has been brought into more harmonious channels than heretofore. The States and their engineers and land boards are beginning to appreciate the fact that the Government has substantial interests in Carey Act segregations and some responsibilities outside of purely perfunctory ones.

This feeling has gone so far that in a number of instances the State officials have requested more full examinations, even after they (the State officials) have made what appeared to be final favorable reports.

The feeling among the State officials that the Government should carefully consider and examine the project even after favorable report by the State is growing.

Further, there seems to be a growing tendency among the States to cooperate to the end that there may be uniformity of procedure in this branch of the work. Three of four persons authorized to speak in this behalf have suggested that a Carey Act convention or conference be arranged, under the auspices of this department, to meet either at Washington or at some central point in the West to take up and carefully consider the whole situation, especially as it may relate to a uniform practice along certain lines, by the States.

During the fiscal year ending June 30, 1913, there were received under the act of March 15, 1910, applications for the withdrawal of 198,403.99 acres, as against 1,416,974.04 acres during the previous year, showing a substantial decrease in applications for withdrawal.

During the same periods there were approved: 1913, 487,756.48; 1912, 214,211.62. Otherwise disposed of: 1913, 655,196.88 acres; 1912, 593,189.20 acres.

Under the Carey Act proper there have been applications for 292,689.05 acres during the past year, as against 184,697.39 acres the year previous.

Especial attention is called to the large increase of approvals this year over last. In 1912, 97,917.01 acres were approved, while in 1913 395,160.74 acres were approved.

The patents issued during the past year totaled 35,170.62 acres.

NEW CONSOLIDATED CAREY ACT SUGGESTED.

The Carey Act, consisting of the parent act, section 4 of the act of August 18, 1894 (28 Stat., 372-422), and 15 amendatory acts and resolutions, citations to which it is not deemed necessary to enumer-

ate here, has been the bone of contention during the past two or three years, and several proposed amendments have been submitted to Congress, but, possibly owing to the fact that each of these dealt only with one phase of the situation and treated the alleged defects piecemeal, none have as yet been enacted into laws.

It is submitted that, while the present act is possibly sufficient to cover the exigencies of the case, an act could be framed which would codify or conform all outstanding legislation and at the same time present a better working basis for the Government.

The salient features of such an act should be:

1. An unlimited grant to the various desert-land States of lands desert in character on practically the same terms and conditions as now obtaining under the present law.

Such a law would make it unnecessary to pass amendatory acts from time to time granting to Wyoming, Idaho, New Mexico, or some other State additional lands.

2. A clause, providing as a condition subsequent, that the State should patent no lands received by it under the Carey Act excepting after at least one year actual residence and cultivation.

3. That in case actual, substantial work of construction is not commenced upon a project within two years after its approval and proof thereof filed with and accepted by the Secretary in accordance with departmental regulations that such approval should be thereafter canceled, unless, upon good cause shown, the Secretary of the Interior extends the time within which construction shall be commenced.

4. That the filing of a Carey Act segregation shall carry with it all rights of way necessary to the project, provided such rights of way are properly delineated upon the map, and that the priorities of such rights of way shall take the date of the filing of the application for segregation, unless they have been previously approved, and will lose priority by taking the date of the Carey Act filing.

5. That the act of March 15, 1910, providing for the temporary withdrawal of public lands, pending investigation and survey preliminary to their inclusion in Carey Act lists, be made part of, and incorporated into the suggested act, and that temporary withdrawal be authorized thereunder of such lands as may be necessary for reservoirs or canals in connection with the proposed project.

* * * * *

ALASKA.

SURVEYS IN ALASKA.

Several causes have diminished the amount of surveying for individuals, viz: Regular homesteads are being provided for by full survey of townships and sections. Claimants under soldier's additional right have learned, by the close scrutiny maintained, to avoid impracticable or unwarranted surveys. Trade and manufacture sites are less frequently applied for as speculative schemes diminish and actual business prevails.

The practice of surveying desirable shore tracts for fishery purposes and holding the inchoate right as property for sale, without intention to occupy and improve, has been effectually stopped by circulars Nos. 151 and 197, setting a limit of six months within which applica-

tions and proof must be filed with the local officers in order to maintain the life of the claim.

The activity of the field division in investigating claims taken under false pretenses and timber depredations has also operated to restore Alaska claims to a more stable basis.

No detached surveys for schools or missions have been recently made. Two small reserves for isolated villages of natives have been created by Executive order for the promotion of their industrial plans and protection from injurious surroundings. The natives are not legally classed as Indians, and the usual laws on Indian matters do not apply in Alaska; but the organic law and all published regulations aim at preservation of their rights.

But while surveys for individuals and corporations have decreased, the extension of regular surveys has been pushed to a remarkable extent in the regions classed as agricultural under the guidance of the assistant supervisor of surveys for Alaska in the present direct system under salaried surveyors.

The surveyor general reports a large amount of work, represented by field notes already filed and awaiting attention, with insufficient clerical force and facilities for performing the necessary work upon them at his office. These are mostly about the Fairbanks meridian and the Seward meridian; and the complaints that lands have not been open to agricultural homestead will be relieved, as fast as the essential office work can be performed.

He also reports receipt of petitions from residents for extension of surveys for similar settlement, as follows:

	Miles long.
Along Susitna Valley.....	100
Along Yentna Valley.....	60
Along Matanuska Valley.....	25
Along Tanana Valley.....	25
Along Knik region.....	20

Reports of the productiveness of the agricultural and grazing regions and the rapidity with which settlements have advanced, seem to justify the surveyor general's urgent request for increased appropriations for extension of the service.

HOMESTEAD LAW.

The homestead laws as now applied to Alaska have been found to be unsuitable to conditions in the Territory. The future development of the natural resources in Alaska depends a great deal upon the development of the agricultural lands. In order to encourage the homesteader to go there, it is necessary that the laws be made as liberal as possible commensurate with proper protection to the public from fraudulent acquisition of such lands, and I recommend that the following changes be made:

1. The area of land subject to homestead entry should be reduced to 160 acres.

2. The area of required cultivation should be reduced to one-fortieth of the entire area the second year and one-twentieth the third year.

3. An absence of six months each year should be permitted.

4. Notice of homestead locations should be filed in the district land office.

5. The survey of homesteads should be made by the Government after the expiration of three years from the date of the entry and upon satisfactory proof of compliance with the law.

6. The right to make a homestead entry in Alaska should exist notwithstanding the applicant may have acquired title to a homestead outside of the Territory.

7. The act of June 22, 1910 (36 Stat., 583), providing for the surface entries of lands containing coal should be extended to include homestead entries in Alaska.

These suggestions follow house joint memorial No. 4, passed by the first Alaska Legislature.

SIXTY-FOOT ROADWAY ALONG SHORES OF NAVIGABLE WATERS.

The reservation made by the tenth section of the act of Congress approved May 14, 1898 (30 Stat., 409), for the purpose of providing a public roadway 60 feet wide along and parallel to the shore line of navigable waters in Alaska should be continuous and unbroken if it is to be of any value. Section 26 of the act approved June 6, 1900 (31 Stat., 321), provides that this 60-foot reserved strip should not apply to mineral and town-site entries. The circular of instructions of January 13, 1904 (32 L. D., 424), holds that this reservation applies to all land sold and entered under the provisions of the act of May 14, 1898, *supra*. The courts of Alaska and the Ninth Circuit Court of Appeals have, however, held in cases coming before them that said reservation relates only to the reserved strip provided for between trade and manufacturing sites entered and sold under section 10 of the act of May 14, 1898, *supra*. In order that the law may be made clear on this point I would recommend that it be amended so as to apply to all land on navigable waters, located and entered under any law applicable to the disposition of public lands in Alaska, with the exception of lands entered under the town-site law. Owing to the existence of streets and highways through and across town sites the provision in the act of 1900, *supra*, exempting town-site entries from the reservation in question, is not objectionable.

MINERAL OR MEDICINAL SPRINGS.

A number of springs alleged to contain waters which possess curative and medicinal qualities have been found in Alaska, but there is no law under which lands containing such springs may be developed and utilized in the public interests. On March 28, 1911, all such springs were withdrawn from settlement, location, sale, or entry, which means that they can not be utilized or developed. It is recommended that a law giving the Secretary of the Interior authority to rent or lease such springs along the lines of the act of Congress of February 28, 1899 (30 Stat., 908), be enacted.

SOLDIERS' ADDITIONAL HOMESTEAD RIGHTS.

By the act of Congress of May 14, 1898 (30 Stat., 409), as amended by the act of March 3, 1903 (32 Stat., 1028), the provisions of the homestead law, including the rights to enter surveyed or unsurveyed

lands through soldiers' additional homestead rights, were extended to Alaska. During the administration of this law it has been found that large corporations, and especially large fishing companies, have used this law as a means to secure title to most of the available fishing, trading, and manufacturing sites along the rugged coast of Alaska. By this means they can acquire title to valuable landings or wharf sites whether they actually need them in the prosecution of their business or not and thereby prevent the smaller operators from acquiring landings for their industries. Section 10 of the act of May 14, 1898, *supra*, contains ample provision for the acquisition of title to land actually needed for any trade and manufacturing site or for any other productive industry. On account of the conditions thus disclosed I have deemed it advisable to call the attention of Congress to the situation without, however, making any recommendation as to the amendment or repeal of any of the existing laws.

* * * * *

COAL LANDS.

In the matter of the Alaska coal claims field investigations have all been completed, and the reports submitted as the result of said investigations have been considered by this office and action taken. The total number of such claims of record was 1,129. Of this number, 534 have been canceled and 191 are held for cancellation and are now before the department on appeal. Adverse proceedings have been ordered on 399 claims. Hearings thus far have been had in 106 of said claims, of which number 33 have been canceled, 1 approved, 15 are now before this office for consideration, and 57 before the register and receiver for decision. Testimony is now being taken in a number of the claims, and the hearings should be practically completed in all the cases this year or early in 1914. The office is diligently endeavoring to complete the hearings in these cases as soon as possible. The witnesses are widely scattered, and therefore the matter of taking the testimony requires considerable time.

Two Alaska coal claims were patented during the early part of the year, one, noted above, after a hearing was had. This claim is located on tidewater near Fort Graham, on the southwesterly portion of Kenai Peninsula. The owners of this claim have a mine sufficiently developed to enable them to supply the towns along the southern coast with coal. The other patented claim is located on Admiralty Island, and it is not known whether the owner of said claim has mined any coal; but the people in southeastern Alaska should be able to be supplied with coal from this mine at a considerably less cost than they are now paying for the imported coal. The patenting of these two claims will afford relief to the people of Alaska who reside along the southern coast, but it will not help those who live in the interior and other parts of the Territory.

No recommendations, however, as to any legislation looking toward the development of the Alaskan coal fields is submitted at the present time, for the reason that this subject is already receiving the active attention of Congress. For the same reason I abstain from any suggestion on the allied question of a general scheme of railway transportation in the Territory.

BIRD RESERVATIONS.

During the fiscal year eight new reservations for the protection of native birds were created, as follows:

The Chamisso Island Reservation, embracing Chamisso and Puffin Islands and other rocky islets in the near neighborhood and located in the entrance to Eschscholtz Bay, at the eastern end of Kotzebue Sound, Alaska. Created December 7, 1912.

The Pishkun Reservation, Mont., embracing Pishkun reclamation reservoir site, together with the smallest legal subdivision of land adjoining same. This reserve is subject to Reclamation Service uses under act of Congress relating thereto. Created December 17, 1912.

Desecheo Island Reservation, P. R., embracing Desecheo Island, located in Mono Passage, approximately 14 miles west of Porto Rico. Created December 19, 1912.

Gravel Island Reservation, Wis., embracing Gravel and Spider Islands, located in Lake Michigan at the mouth of Green Bay. Created January 19, 1913.

The Aleutian Islands Reservation, Alaska, embracing the Aleutian chain from and including Unimak and Sannak Islands on the east and Attu Island on the west. The Executive order not only provides for the protection of native birds but also game, and for the propagation of reindeer and fur-bearing animals and the development of fisheries. Two departments, Agriculture and Commerce, exercise jurisdiction over the activities falling properly under their respective controls. Created March 3, 1913.

The reservation which may properly be designated the Panama Reservation embraces the Canal Zone, Isthmus of Panama. This reservation is under the jurisdiction of the Isthmian Canal Commission. Created March 19, 1913.

The Walker Lake Reservation, Ark., embracing 14.68 acres of land, located in townships 15 and 16 north, range 12 east, fifth principal meridian. Created April 21, 1913.

The Petit Bois Island Reservation, embracing the public land on Petit Bois Island, located in the Gulf of Mexico, approximately 10 miles south of the Alabama and Mississippi coast. Created May 6, 1913.

By Executive order dated November 14, 1912, the Niobrara Reservation, Nebr., for the protection of native birds, was slightly enlarged so as to include the old parade ground of the former Fort Niobrara military reservation and a few buildings remaining of those erected and occupied by the military personnel of the post. Upon this enlarged reservation have been established small but thriving herds of bison and other large mammals native to Nebraska.

These reserves protect important breeding grounds of many species of native edible and plume birds characteristic of the avifauna of the localities in which located, the Aleutian Islands Executive order alone being broadened so as to include certain food and fur-bearing animals and fish.

NATIONAL MONUMENTS.

No additional reservations under the provisions of the act approved June 8, 1906, were created during the year, but the vandalism and spoliation by unauthorized persons of some of the most important

and interesting of the national monuments referred to in former annual reports continues. Of these, several complaints have been filed, but they have been invariably met with the response that Congress during several years past has uniformly declined to favorably consider the annual estimate for a few thousand dollars to enable this bureau to place in the charge of local custodians, at practically nominal salaries, such of the monuments as were subject to these abuses. In the case of the Tumacacori Mission, an ancient Spanish Church in Santa Cruz County, Ariz., a bill was introduced in the second session of the Sixty-third Congress, by Hon. Carl Hayden, providing for an appropriation of \$25,000 to enable the Secretary of the Interior to preserve and restore the mission buildings and employ a custodian therefor. This bill has thus far failed of passage and it is certain that monuments which contain perishable objects, or those which incite the cupidity of persons not interested in the preservation of historic or prehistoric ruins, should no longer be created unless some provision is made thereafter for their protection. Their isolation and wholly unprotected condition offer opportunities to vandals and professional plunderers that appear to be irresistible. There should be a reasonable annual appropriation for the protection of national monuments, and in view of the fact that the annual estimates of the bureau for this purpose have regularly failed it is recommended that the administration of national monuments be transferred from the General Land Office to the Interior Department and added to and made a part of the administration of national parks, and that the estimate for the necessary appropriation be submitted as a section of the national park estimates. This suggestion seems especially appropriate because after their establishment there is no essential difference between a national park and a national monument.

FINAL PROOFS.

Under the law as it now stands, entrymen desiring to submit final proofs are required, under section 2294 of the Revised Statutes, to make such proof before one of several officers—register and receiver, United States commissioner, judge, or clerk of court. No matter which one of these officers may be selected by the entryman he will, in any event, be required to make, in most cases, a long trip from his land, taking with him his witnesses to testify in support of his claim. This entails a heavy expense upon entrymen who, not infrequently, are poorly prepared to assume such burden. The proof, when submitted in this manner, is necessarily more or less perfunctory in character because of the inability of the proof-taking officer to bring any knowledge of his own to bear upon the proofs submitted, which results often in long and tedious investigations of final proofs under charges affecting their validity.

It is believed that a more satisfactory method of taking such proofs would be found if the law was so modified as to allow the final proofs in each case to be taken upon the land itself before a special agent designated for that purpose; this officer being personally present upon the land at the time of his taking the proof would obviate the necessity of any later examination by a special agent on the part of this office to ascertain the true situation as to the compliance with law on the part of the claimant. Appropriate fees for

this service by our special agent could be collected by him at the time of the execution of the proof. This scheme would certainly save great trouble and expense to the entryman and expedite the disposition of final proofs in the General Land Office.

A recommendation of this character has been submitted heretofore, and I believe should be again urged before the attention of Congress.

PROFESSIONAL LOCATORS.

Attention has heretofore been called to the urgent necessity of some legislation by which professional locators may be made amenable to regulations adopted for the protection of settlers. The office is constantly receiving complaints from entrymen or applicants for the right of entry who have been willfully misinformed as to the character, condition, and description of specified tracts by unscrupulous locators. An act of Congress denying professional locators access to the records of the district offices, except on due and continued compliance with regulations formulated by the Secretary of the Interior, would fully serve the purpose desired.

* * * * *

CALIFORNIA DISTRICT MINING SHEETS.

The situation in California, due to the fire at San Francisco which destroyed the records of the surveyor general's office, needs immediate attention. This is the compilation of the so-called district mining sheets to replace the records destroyed which were compiled from the beginning of the mineral division of the United States surveyor general's office in California to date. These district mining sheets constitute a connected map of the mineral claims surveyed and platted for the entire State of California on which is platted out each survey before the plats are made up in order to determine whether there is any conflict with prior surveys. Such a map and such a continuous platting thereon is necessary, for the reason that as the surveys within the same district may be made from different monuments two or more surveys might cover the same land and the fact not be shown by the separate plats. The work in the office of the surveyor general of California is seriously hampered because of the lack of such connected diagrams, and it is impossible to replace the district mining sheets by the employment of draftsmen payable from "Deposits by individuals for surveying public lands" in view of the comptroller's decision of February 28, 1913, already discussed. The recommended changes in the appropriations for new legislation contained in the estimates for the next fiscal year will, if adopted, permit of this work being done.

* * * * *

Very respectfully,

CLAY TALLMAN,
Commissioner.

THE SECRETARY OF THE INTERIOR.

STATISTICS RELATING TO THE DISPOSITION OF THE PUBLIC DOMAIN.

Area of States and Territories.

[Based upon careful joint calculations made in the General Land Office, the Geological Survey, and the Bureau of the Census.]

State or Territory.	Land surface.		Water surface.		Total areas.	
	<i>Sq. m.</i>	<i>Acres.</i>	<i>Sq. m.</i>	<i>Acres.</i>	<i>Sq. m.</i>	<i>Acres.</i>
Alabama.....	51,279	32,818,560	719	460,160	51,998	33,278,720
Arizona.....	113,810	72,838,400	146	93,440	113,956	72,931,840
Arkansas.....	52,525	33,616,000	810	518,400	53,335	34,134,400
California.....	155,652	99,617,280	2,645	1,692,800	158,297	101,310,080
Colorado.....	103,658	66,341,120	290	185,600	103,948	66,526,720
Connecticut.....	4,820	3,084,800	145	92,800	4,965	3,177,600
Delaware.....	1,965	1,257,600	405	259,200	2,370	1,516,800
District of Columbia.....	60	38,400	10	6,400	70	44,800
Florida.....	54,861	35,111,040	3,805	2,435,200	58,666	37,546,240
Georgia.....	58,725	37,584,000	540	345,600	59,265	37,929,600
Idaho.....	83,354	53,346,560	534	341,760	83,888	53,688,320
Illinois.....	56,043	35,867,520	622	398,080	56,665	36,265,600
Indiana.....	36,045	23,068,800	309	197,760	36,354	23,266,560
Iowa.....	55,586	35,575,040	561	359,040	56,147	35,934,080
Kansas.....	81,774	52,335,360	384	245,760	82,158	52,581,120
Kentucky.....	40,181	25,715,840	417	266,880	40,598	25,982,720
Louisiana.....	45,409	29,061,760	3,097	1,982,080	48,506	31,043,840
Maine.....	29,895	19,132,800	3,145	2,012,800	33,040	21,145,600
Maryland.....	9,941	6,362,240	2,386	1,527,040	12,327	7,889,280
Massachusetts.....	8,039	5,144,960	227	145,280	8,266	5,290,240
Michigan.....	57,480	36,787,200	500	320,000	57,980	37,107,200
Minnesota.....	80,858	51,749,120	3,824	2,447,360	84,682	54,196,480
Mississippi.....	46,362	29,671,680	503	321,920	46,865	29,993,600
Missouri.....	68,727	43,985,200	693	443,520	69,420	44,428,800
Montana.....	146,201	93,568,640	796	509,440	146,997	94,078,080
Nebraska.....	76,808	49,157,120	712	455,680	77,520	49,612,800
Nevada.....	109,821	70,285,440	869	556,160	110,690	70,841,600
New Hampshire.....	9,031	5,779,840	310	198,400	9,341	5,978,240
New Jersey.....	7,514	4,808,960	710	454,400	8,224	5,263,360
New Mexico.....	122,503	78,401,920	131	83,840	122,634	78,485,760
New York.....	47,654	30,498,560	1,550	992,000	49,204	31,490,560
North Carolina.....	48,740	31,193,600	3,686	2,359,040	52,426	33,552,640
North Dakota.....	70,183	44,917,120	654	418,560	70,837	45,335,680
Ohio.....	40,740	26,073,600	300	192,000	41,040	26,265,600
Oklahoma.....	69,414	44,424,960	643	411,520	70,057	44,836,480
Oregon.....	95,607	61,188,480	1,092	698,880	96,699	61,887,360
Pennsylvania.....	44,832	28,692,480	294	188,160	45,126	28,880,640
Rhode Island.....	1,067	682,880	181	115,840	1,248	798,720
South Carolina.....	30,495	19,516,800	494	316,160	30,989	19,832,960
South Dakota.....	76,868	49,195,520	747	478,080	77,615	49,673,600
Tennessee.....	41,687	26,679,680	335	214,400	42,022	26,894,080
Texas.....	262,398	167,934,720	3,498	2,238,720	265,896	170,173,440
Utah.....	82,184	52,597,760	2,806	1,795,840	84,990	54,393,600
Vermont.....	9,124	5,839,360	440	281,600	9,564	6,120,960
Virginia.....	40,262	25,767,680	2,365	1,513,600	42,627	27,281,280
Washington.....	66,836	42,775,040	2,291	1,466,240	69,127	44,241,280
West Virginia.....	24,022	15,374,080	148	94,720	24,170	15,468,800
Wisconsin.....	55,256	35,363,840	810	518,400	56,066	35,882,240
Wyoming.....	97,594	62,460,160	320	204,800	97,914	62,664,960
Alaska.....	2,973,890	1,903,289,600	52,899	33,855,360	3,026,789	1,937,144,960
Guam.....					590,884	378,165,760
Hawaii.....					210	134,400
Canal Zone.....					6,449	4,127,360
Philippine Islands.....					436	279,040
Porto Rico.....					115,026	73,616,640
American Samoa.....					3,435	2,198,400
					77	49,280
Total.....					3,743,306	2,395,715,840

Owing to their location adjoining the Great Lakes, the States enumerated below contain approximately an additional number of square miles as follows: Illinois, 1,674 square miles of Lake Michigan; Indiana, 230 square miles of Lake Michigan; Michigan, 16,553 square miles of Lake Superior, 12,922 square miles of Lake Michigan, 9,925 square miles of Lake Huron, and 460 square miles of Lakes St. Clair and Erie; Minnesota, 2,514 square miles of Lake Superior; New York, 3,140 square miles of Lakes Ontario and Erie; Ohio, 3,443 square miles of Lake Erie; Pennsylvania, 891 square miles of Lake Erie; Wisconsin, 2,375 square miles of Lake Superior and 7,500 square miles of Lake Michigan.

In addition to the water areas noted above, California claims jurisdiction over all Pacific waters lying within 3 English miles of her coast; Oregon claims jurisdiction over a similar strip of the Pacific Ocean 1 marine league in width between latitude 42° north and the mouth of the Columbia River, and Texas claims jurisdiction over a strip of Gulf water 3 leagues in width adjacent to her coast and between the Rio Grande and the Sabine River.

United States district land offices.

Locations.	Established.	Opened.	Locations.	Established.	Opened.
Alabama:			Montana—Contd.		
Montgomery.....	July 10, 1832	Jan. 1, 1834	Miles City.....	Apr. 30, 1880	Oct. 19, 1880
Alaska:			Missoula.....	Apr. 1, 1890	Apr. 20, 1891
Fairbanks.....	May 14, 1907	July 1, 1907	Nebraska:		
Juneau.....	Apr. 2, 1902	June 20, 1902	Alliance.....	Apr. 16, 1890	July 1, 1890
Nome.....	May 14, 1907	July 1, 1907	Broken Bow.....	do.....	July 7, 1890
Arizona:			Lincoln.....	July 7, 1888	Sept. 7, 1888
Phoenix.....	July 25, 1905	Oct. 2, 1905	North Platte.....	Apr. 22, 1872	Apr. 11, 1873
Arkansas:			O'Neill.....	Apr. 7, 1888	July 16, 1888
Camden.....	Jan. 10, 1871	Mar. 20, 1871	Valentine.....	June 19, 1882	July 7, 1883
Harrison.....	July 14, 1870	Feb. 27, 1871	Nevada:		
Little Rock.....	Feb. 17, 1818	Sept. 1, 1821	Carson City.....	July 2, 1862	Mar. 1, 1864
California:			New Mexico:		
Eureka.....	Mar. 29, 1858	July 24, 1858	Clayton.....	Dec. 18, 1888	Aug. 12, 1889
Independence.....	Apr. 22, 1886	Mar. 22, 1887	Fort Sumner.....	June 22, 1910	Oct. 1, 1910
Los Angeles.....	June 12, 1869	Sept. 22, 1869	Las Cruces.....	Mar. 10, 1883	May 1, 1883
Sacramento.....	July 26, 1866	Nov. 12, 1867	Roswell.....	Mar. 1, 1889	Dec. 9, 1889
San Francisco.....	Mar. 4, 1911	May 1, 1911	Santa Fe.....	May 24, 1858	Nov. 24, 1858
Susanville.....	Feb. 10, 1871	Mar. 2, 1871	Tucumcari.....	Mar. 16, 1908	July 1, 1908
Visalia.....	Mar. 29, 1858	July 10, 1858	North Dakota:		
Colorado:			Bismarck.....	Apr. 24, 1874	Oct. 12, 1874
Del Norte.....	June 20, 1874	Mar. 22, 1875	Devils Lake.....	Mar. 3, 1883	Aug. 24, 1883
Denver.....	June 4, 1864	Aug. 15, 1864	Dickinson.....	Mar. 16, 1904	July 1, 1904
Durango.....	Apr. 20, 1882	Oct. 2, 1882	Minot.....	Sept. 26, 1890	Oct. 1, 1891
Glenwood.....			Williston.....	Apr. 26, 1906	Aug. 1, 1906
Springs.....	July 3, 1884	Nov. 10, 1884	Oklahoma:		
Hugo.....	Feb. 6, 1890	Sept. 7, 1890	Guthrie.....	Mar. 3, 1889	Apr. 22, 1889
Lamar.....	Aug. 4, 1886	Jan. 3, 1887	Woodward.....	Aug. 25, 1893	Sept. 16, 1893
Leadville.....	Apr. 5, 1879	July 1, 1879	Oregon:		
Montrose.....	Jan. 4, 1888	Sept. 1, 1888	Burns.....	June 1, 1880	Sept. 2, 1889
Pueblo.....	May 27, 1870	Jan. 16, 1871	La Grande.....	July 3, 1866	Nov. 15, 1867
Sterling.....	Feb. 6, 1890	Aug. 1, 1890	Lakeview.....	June 6, 1877	Aug. 6, 1877
Florida:			Portland.....	Aug. 24, 1854	Jan. 1, 1855
Gainesville.....	June 8, 1872	Apr. 30, 1873	Roseburg.....	Sept. 15, 1859	Jan. 3, 1860
Idaho:			The Dalles.....	Jan. 11, 1875	June 1, 1875
Blackfoot.....	Sept. 3, 1886	Nov. 16, 1886	Vale.....	Mar. 15, 1910	July 1, 1910
Boise.....	July 26, 1866	Jan. 13, 1868	South Dakota:		
Coeur d'Alen.....	July 14, 1884	Dec. 21, 1885	Timber Lake.....	Feb. 12, 1911	May 1, 1911
Hailey.....	Jan. 24, 1883	July 16, 1883	Bellefourche.....	Feb. 6, 1909	July 1, 1909
Lewiston.....	July 26, 1866	Sept. 26, 1871	Gregory.....	July 14, 1880	Jan. 3, 1882
Kansas:			Lemmon.....	May 29, 1908	Aug. 1, 1908
Dodge City.....	Dec. 20, 1893	Feb. 3, 1894	Pierre.....	Feb. 10, 1890	May 12, 1890
Topeka.....	July 24, 1861	Sept. 10, 1861	Rapid City.....	Dec. 13, 1888	Jan. 15, 1889
Louisiana:			Utah:		
Baton Rouge.....	Jan. 6, 1911	Apr. 1, 1911	Salt Lake City...	July 16, 1868	Nov. 1, 1868
Michigan:			Vernal.....	May 9, 1905	July 1, 1905
Marquette.....	Mar. 19, 1857	July 14, 1857	Washington:		
Minnesota:			North Yakima...	Apr. 11, 1885	Apr. 24, 1885
Cass Lake.....	Apr. 1, 1903	July 1, 1903	Olympia.....	May 16, 1890	Oct. 1, 1890
Crookston.....	Apr. 29, 1878	May 5, 1879	Seattle.....	June 27, 1887	Dec. 3, 1887
Duluth.....	Mar. 27, 1862	Jan. 15, 1863	Spokane.....	June 23, 1883	Oct. 1, 1883
Mississippi:			Vancouver.....	May 16, 1860	July 3, 1861
Jackson.....	June 23, 1836	July 25, 1836	Walla Walla.....	Mar. 3, 1871	July 17, 1871
Missouri:			Waterville.....	May 16, 1890	Nov. 6, 1890
Springfield.....	June 26, 1834	Oct. 4, 1838	Wisconsin:		
Montana:			Wausau.....	June 19, 1872	Aug. 19, 1872
Billings.....	Feb. 5, 1906	July 2, 1906	Wyoming:		
Bozeman.....	June 20, 1874	Oct. 5, 1874	Buffalo.....	Mar. 3, 1887	May 1, 1888
Glasgow.....	Feb. 25, 1907	June 1, 1907	Cheyenne.....	Feb. 5, 1870	Aug. 10, 1870
Great Falls.....	May 8, 1902	Aug. 1, 1902	Douglas.....	Apr. 23, 1890	Nov. 1, 1890
Havre.....	Mar. 15, 1910	July 1, 1910	Evanston.....	Aug. 9, 1876	Aug. 13, 1877
Helena.....	Mar. 2, 1867	Apr. 27, 1867	Lander.....	Apr. 23, 1890	Nov. 8, 1890
Kalispell.....	Mar. 2, 1897	July 1, 1897	Sundance.....	Apr. 3, 1890	Oct. 27, 1890
Lewistown.....	Apr. 1, 1890	Nov. 26, 1890			

NOTE.—The land offices in Ohio, Indiana, Illinois, and Iowa are abolished, and the vacant tracts of public lands in those States are subject to entry and location at the General Land Office, Washington, D. C.

Final homestead entries from the passage of the homestead act to June 30, 1913.

Fiscal year ended June 30—	Number.	Acres.	Fiscal year ended June 30—	Number.	Acres.
1868.....	2,772	355,086.04	1892.....	22,822	3,259,897.07
1869.....	3,965	504,301.97	1893.....	24,204	3,477,231.63
1870.....	4,041	519,727.84	1894.....	20,544	2,929,947.41
1871.....	5,087	629,162.25	1895.....	20,922	2,980,809.30
1872.....	5,917	707,409.83	1896.....	20,099	2,790,242.55
1873.....	10,311	1,224,890.93	1897.....	20,115	2,778,404.20
1874.....	14,129	1,585,781.56	1898.....	22,281	3,095,017.75
1875.....	18,293	2,068,537.74	1899.....	22,812	3,134,140.44
1876.....	22,530	2,590,552.81	1900.....	25,286	3,477,842.71
1877.....	19,900	2,407,828.19	1901.....	37,568	5,241,120.76
1878.....	22,460	2,662,980.82	1902.....	31,627	4,342,747.70
1879.....	17,391	2,070,842.39	1903.....	26,373	3,576,964.14
1880.....	15,441	1,938,234.89	1904.....	23,932	3,232,716.75
1881.....	15,077	1,928,204.76	1905.....	24,621	3,419,387.15
1882.....	17,174	2,219,453.80	1906.....	25,546	3,526,748.58
1883.....	18,998	2,504,414.51	1907.....	26,485	3,740,567.71
1884.....	21,843	2,945,574.72	1908.....	29,636	4,242,710.59
1885.....	22,066	3,032,679.11	1909.....	25,510	3,699,466.79
1886.....	19,356	2,663,531.83	1910.....	23,253	3,795,882.89
1887.....	19,866	2,749,037.48	1911.....	25,908	4,620,137.12
1888.....	22,413	3,175,400.64	1912.....	24,326	4,306,068.52
1889.....	25,549	3,681,708.80	1913.....	53,252	10,009,285.16
1890.....	23,080	4,060,592.77			
1891.....	27,686	3,954,587.77			
			Total.....	977,467	137,855,709.37

Timber and stone entries from the passage of the act of June 3, 1878, to June 30, 1913.

State or Territory.	Entries.	Area.	Amount.
		<i>Acres.</i>	
Alabama.....	285	22,562.71	\$61,071.05
Arizona.....	3	200.00	500.00
Arkansas.....	2,159	294,369.65	594,844.04
California.....	19,831	2,793,547.55	7,030,988.53
Colorado.....	2,800	346,406.75	879,780.99
Florida.....	884	100,867.61	278,398.47
Idaho.....	7,239	973,692.23	2,510,778.57
Iowa.....	3	119.36	298.40
Louisiana.....	1,549	137,339.99	340,533.70
Michigan.....	1,614	133,877.33	339,630.73
Minnesota.....	12,213	1,374,729.18	3,459,356.60
Mississippi.....	83	6,116.16	15,572.19
Montana.....	4,835	625,352.21	1,597,911.52
Nebraska.....	1	97.20	243.00
Nevada.....	49	6,222.32	15,553.19
North Dakota.....	81	8,646.31	22,005.78
Oklahoma.....	1	40.00	100.00
Oregon.....	25,961	3,703,554.89	9,375,541.51
South Dakota.....	542	59,444.01	151,900.22
Utah.....	23	2,280.60	5,411.42
Washington.....	15,939	2,117,850.65	5,350,629.22
Wisconsin.....	1,066	78,108.47	195,841.70
Wyoming.....	3,319	374,761.16	924,840.04
Total.....	100,481	13,160,190.34	33,151,735.87

Desert land entries from the passage of the act of Mar. 3, 1877, to June 30, 1913.

States or Territories.	Entries.		Area.		Amount.		
	Original.	Final.	Original.	Final.	Original.	Final.	Total.
			<i>Acres.</i>	<i>Acres.</i>			
Arizona.....	7,766	954	2,186,191.21	256,055.05	\$549,021.55	\$289,895.51	\$838,917.06
California.....	18,626	3,064	4,223,259.09	602,097.01	1,071,862.60	625,140.87	1,697,003.47
Colorado.....	16,104	2,569	3,007,053.57	454,926.14	852,317.61	454,730.26	1,207,047.87
Dakota Territory.....	35	1	20,021.00	300.00	5,005.25	300.00	5,305.25
Idaho.....	16,084	3,394	2,781,178.40	750,482.65	695,000.23	704,004.21	1,399,004.44
Montana.....	30,164	11,626	5,700,140.39	2,219,717.02	1,431,679.81	2,232,660.23	3,664,340.04
Nevada.....	1,919	262	441,581.44	57,990.31	100,743.12	57,922.83	168,665.95
New Mexico.....	10,631	1,260	2,056,464.93	179,490.96	516,245.85	279,275.35	795,521.20
North Dakota.....	515	109	85,118.51	18,511.75	21,281.09	18,576.49	39,857.58
Oregon.....	5,972	1,332	1,020,258.15	220,911.67	254,744.60	19,856.60	474,601.20
South Dakota.....	3,917	396	590,764.64	69,381.36	147,069.35	69,699.60	216,768.95
Utah.....	7,350	1,989	1,295,533.02	323,475.79	330,695.38	329,399.16	660,094.54
Washington.....	5,586	462	933,271.93	50,345.42	244,259.43	64,084.87	308,344.30
Wyoming.....	15,820	5,631	5,314,899.16	1,244,720.90	885,580.68	1,253,416.28	2,138,996.96
Total.....	140,489	33,049	27,855,735.44	6,448,396.03	7,015,506.55	6,598,962.26	13,614,468.81

Timber-culture entries from the passage of the act of Mar. 3, 1873, to June 30, 1913.

States or Territories.	Entries.		Area.			Amount.				
	Original.	Final.	Commuted.	Original.	Final.	Commuted.	Fees (original).	Fees (final).	Purchase money.	Total.
Arizona.....	1, 152	52	74	Acres. 164,806.63	7, 149.14	10, 223.42	\$15, 224.00	\$208.00	\$12, 779.26	\$28, 211.26
Arkansas.....	41	4	1	4, 817.14	480.00	459.00	489.00	16.00	44.00	549.00
California.....	8, 264	480	567	1, 163, 992.03	63, 411.58	78, 728.76	110, 014.00	1, 904.00	98, 499.13	210, 417.13
Colorado.....	27, 804	3, 789	660	4, 332, 922.19	585, 243.30	98, 179.52	384, 938.00	15, 154.00	122, 722.36	522, 814.36
Dakota Territory.....	77, 446	1, 309		12, 055, 642.98	185, 467.24		1, 074, 862.44	4, 984.79		1, 079, 847.23
Florida.....	3			480.00			42.00			42.00
Idaho.....	4, 054	341	236	533, 957.49	40, 436.03	28, 244.51	51, 447.38	1, 369.50	35, 305.93	88, 122.81
Iowa.....	1, 044	390	39	81, 378.95	31, 987.87	2, 292.17	11, 838.83	1, 560.00	2, 965.22	16, 394.05
Kansas.....	64, 345	12, 886	961	9, 702, 653.36	2, 005, 831.55	142, 031.88	883, 275.56	51, 529.03	178, 650.55	1, 113, 455.14
Louisiana.....	713	87	42	101, 695.31	11, 937.97	3, 886.83	9, 651.55	348.00	7, 299.54	17, 299.09
Minnesota.....	15, 268	2, 924	389	2, 099, 046.55	373, 380.90	40, 281.29	207, 154.98	11, 712.00	61, 543.77	280, 410.75
Montana.....	3, 595		225	486, 638.66	56, 019.73	29, 044.43	46, 162.00	1, 632.00	36, 506.32	84, 300.32
Nebraska.....	59, 127	16, 870	1, 250	8, 876, 351.20	2, 546, 696.04	187, 371.35	813, 382.33	67, 776.73	234, 332.61	1, 115, 491.67
Nevada.....	46	1		6, 292.50	160.00		614.00	4.00		618.00
New Mexico.....	1, 612	91	55	230, 316.54	12, 931.60	7, 837.25	21, 294.00	363.00	9, 796.56	31, 453.56
North Dakota.....	1, 699	7, 897	781	263, 123.95	1, 220, 605.66	120, 524.80	23, 446.00	31, 576.83	150, 661.75	205, 684.58
Oregon.....	7, 126	1, 502	252	1, 051, 275.21	224, 545.60	35, 902.61	95, 821.00	6, 028.00	44, 878.37	146, 721.37
South Dakota.....	2, 925	13, 704	821	1, 449, 583.61	2, 124, 753.58	121, 730.98	40, 151.00	55, 036.00	152, 062.89	247, 269.89
Texas.....	1, 470	138	89	179, 690.74	15, 556.26	10, 157.44	17, 925.00	552.00	12, 696.85	31, 173.85
Utah.....	9, 354	2, 006	538	1, 362, 193.51	292, 727.52	75, 689.54	125, 615.00	8, 020.00	94, 770.83	228, 405.83
Washington.....	1			40.00	40.00		9.00	4.00		13.00
Wisconsin.....		332	125	459, 556.42	50, 383.08	15, 288.29	41, 904.00	1, 328.00	19, 135.91	62, 367.91
Wyoming.....										
Total.....	290, 278	65, 263	7, 105	43, 606, 344.97	9, 855, 944.45	1, 010, 305.09	3, 975, 261.07	261, 105.88	1, 274, 671.85	5, 511, 032.80

Coal-land entries from the passage of the act of Mar. 3, 1873, to June 30, 1913.

State or Territory.	Entries.	Area.	Amount.
		<i>Acres.</i>	
Alabama.....	2	239.40	\$2,394.00
Alaska ¹	159	37,011.81	370,118.58
Arizona.....	43	6,693.35	74,997.00
California.....	38	5,535.06	81,531.30
Colorado.....	1,033	155,682.72	2,192,897.20
Colorado ²	433	56,786.77	840,838.90
Dakota.....	8	553.57	5,835.70
Idaho.....	11	2,202.84	22,031.80
Montana.....	386	55,870.41	983,450.10
Nevada.....	6	680.11	8,402.20
New Mexico.....	204	24,069.54	382,103.80
North Dakota.....	133	7,971.69	120,642.20
Oregon.....	57	9,043.33	96,140.30
South Dakota.....	40	2,743.64	30,284.80
Utah.....	416	59,031.53	1,305,482.95
Washington.....	368	57,958.89	913,432.80
Wyoming.....	721	104,514.40	2,102,991.26
Total.....	4,058	586,619.06	9,533,534.89

¹ The showing of 159 "entries" in this table includes locations on which final certificates have issued, and those on which payment has been made but for which receiver's receipt only has issued. There are only 35 coal claims in Alaska on which final certificates have issued to date, which carry an area of 5,446.84 acres, for which there has been paid \$54,468.43, 33 of which have been canceled. This explanation is made in view of the fact that in prior reports all proofs upon which payments were made were given as entries.

² Within the Ute Indian Reservation.

³ Territory.

Land concessions by acts of Congress to States and corporations for railroad and military wagon-road purposes from the year 1850 to June 30, 1913.

	STATE GRANTS.	Acres.
Illinois:		
Illinois Central.....		2,595,133.00
Mississippi:		
Mobile & Ohio River.....		¹ 737,130.29
Vicksburg & Meridian.....		199,101.51
Gulf & Ship Island.....		139,113.22
		1,075,345.02
Alabama:		
Mobile & Ohio River.....		¹ 419,528.44
Alabama & Florida.....		399,022.84
Selma, Rome & Dalton.....		458,555.82
Coosa & Tennessee.....		67,784.96
Mobile & Girard.....		² 302,181.16
Alabama & Chattanooga.....		653,888.76
South & North Alabama.....		445,438.43
		2,746,400.41
Florida:		
Florida Central & Peninsular.....		731,711.77
Florida & Alabama.....		166,691.08
Pensacola & Georgia.....		1,279,236.70
Florida, Atlantic & Gulf Central.....		29,384.18
		2,207,023.73
Louisiana:		
Vicksburg, Shreveport & Pacific.....		472,421.62
New Orleans, Opelousas & Great Western.....		(³)

¹ In the adjustment of this grant the road was treated as an entirety and without reference to the State line; hence Alabama has had approved to her more and Mississippi less than they would appear to be entitled to in proportion to the length of the road in the respective States.

² This grant was adjusted Apr. 24, 1893, and 302,181.16 acres were allotted to the company. The balance of the previously certified lands were ordered restored to entry under the forfeiture act of Sept. 23, 1890.

³ Certified lands, footing 719,189.79 acres, were reconveyed to the United States by the governor of Louisiana Feb. 24, 1888, the grant having been forfeited by the act of July 14, 1870 (16 Stat., 277).

Arkansas:		Acres.
St. Louis, Iron Mountain & Southern.....		1,325,355.46
Little Rock & Fort Smith.....		1,052,082.51
Memphis & Little Rock.....		184,657.33
		2,562,095.30
Missouri:		
Southwest branch of the Pacific road.....		1,161,284.51
Hannibal & St. Joseph.....		611,323.35
St. Louis, Iron Mountain & Southern.....		65,120.31
		1,837,728.17
Iowa:		
Burlington & Missouri River.....		389,990.11
Chicago, Rock Island & Pacific.....		¹ 483,214.36
Cedar Rapids & Missouri River.....	{	161,532.81
		¹ 922,813.67
		244,022.96
Dubuque & Sioux City.....		¹ 556,406.74
Iowa Falls & Sioux City.....		683,057.34
Des Moines Valley.....		840,091.36
Chicago, Milwaukee & St. Paul.....		326,216.10
McGregor & Missouri River.....		322,412.81
Sioux City & St. Paul.....	}	
		4,929,758.26
Michigan:		
Port Huron & Lake Michigan.....		37,467.44
Jackson, Lansing & Saginaw.....		743,787.58
Grand Rapids & Indiana.....		852,521.10
Flint & Pere Marquette.....		512,877.03
Marquette, Houghton & Ontonagon.....		² 305,929.59
Ontonagon & Brule River.....		34,227.08
Bay de Noquet & Marquette.....		128,301.05
Chicago & North Western.....		518,065.36
		3,133,176.23
Wisconsin:		
Chicago, St. Paul, Minneapolis & Omaha (formerly West Wisconsin).....		813,706.71
Wisconsin Railroad Farm Mortgage Land Co.....		163,159.65
Chicago, St. Paul, Minneapolis & Omaha (formerly St. Croix & Lake Superior).....		816,487.76
Branch to Bayfield.....		471,721.14
Chicago & North Western.....		546,446.20
Wisconsin Central.....		838,227.69
		3,649,749.15
Minnesota:		
St. Paul, Minneapolis & Manitoba (formerly first division, St. Paul & Pacific).....		³ 256,477.73
Western Railroad (succeeded by St. Paul & Northern Pacific Railroad Co.).....		
St. Paul, Minneapolis & Manitoba (formerly St. Vincent extension of the St. Paul & Pacific).....		

¹ Includes 35,685.49 acres of the Chicago, Rock Island & Pacific R. R.; 109,756.85 acres of the Cedar Rapids & Missouri River R. R.; and 77,535.22 acres of the Dubuque & Sioux City R. R., situated in the old Des Moines River grant of Aug. 8, 1846, which should be deducted from the foregoing amount. (Wolcott v. Des Moines Co., 5 Wall., 631.)

² Excess of 131,431.71 acres originally certified under this grant reconveyed by State or entered under act Mar. 3, 1887, by Michigan Land & Iron Co. (Ltd.), grant having been forfeited in part by act Mar 1889. (25 Stat., 1008.)

³ Declared to be one grant. (See 32 L. D., 21.)

Minnesota—Continued.

	Acres.
Minnesota Central.....	179,734.29
Winona & St. Peter.....	1,680,974.92
St. Paul & Sioux City.....	1,126,578.55
St. Paul & Duluth.....	860,973.62
Southern Minnesota, from a point on the Mississippi River to Houston.....	546,745.44
Southern Minnesota, extension (now Chicago, Milwaukee & St. Paul).....	
Hastings & Dakota.....	377,776.15
	8,028,999.95

Minnesota, North Dakota, Montana, Washington:

St. Paul, Minneapolis & Manitoba, now Great Northern (main
and branch), a special act (Aug. 5, 1892, 27 Stat. L., 390) to pro-
vide for indemnity for lands relinquished by the company. . . . (1)

Kansas:

Leavenworth, Lawrence & Galveston.....	² 249,446.13
Missouri, Kansas & Texas.....	³ 976,593.22
Atchison, Topeka & Santa Fe.....	2,944,788.14
St. Joseph & Denver City.....	462,933.24
	4,633,760.73
Grand total of State grants.....	37,870,852.30

CORPORATION GRANTS.

Union Pacific.....	11,930,845.95
Central Pacific.....	5,842,717.72
Central Pacific (successor by consolidation with Western Pacific)....	458,147.97
Central branch Union Pacific.....	223,080.50
Union Pacific (Kansas division).....	6,175,660.63
Union Pacific (successor to Denver Pacific Ry. Co.).....	807,564.76
Burlington & Missouri River in Nebraska.....	2,374,090.77
Sioux City & Pacific (now Missouri Valley Land Co.).....	42,610.95
Northern Pacific.....	34,546,147.09
Oregon Branch of the Central Pacific (California & Oregon).....	3,154,994.16
Oregon & California.....	2,765,677.10
Atlantic & Pacific (now Santa Fe Pacific).....	4,363,843.64
Southern Pacific (main line).....	3,677,509.83
Southern Pacific (branch line).....	1,451,281.08
Oregon Central.....	128,618.13
New Orleans Pacific.....	1,001,783.27
	78,944,573.55
Grand total to corporations.....	78,944,573.55

WAGON ROADS.

From Lake Erie to Connecticut Western Reserve.....	80,773.54
From Lake Michigan to Ohio River.....	170,580.24
From Fort Wilkins, Copper Harbor, Mich., to Green Bay, Wis.....	302,930.96
From Fort Wilkins, Copper Harbor, to Wisconsin State line.....	221,013.35
Oregon Central Military Co. (now California & Oregon Land Co.).....	679,790.75
Corvallis & Yaquina Bay.....	81,895.25
Willamette Valley and Cascade Mountain.....	861,511.86
Dalles military road.....	556,827.04
Coos Bay military road.....	105,240.11
	3,060,563.10
Grand total.....	3,060,563.10

¹ See Minnesota for original grants.² Includes 186,936.72 acres of the "Osage ceded reservation," which are to be deducted from the above amount under the decision of the Supreme Court in the case of the Leavenworth, Lawrence & Galveston Railroad v. The United States (92 U. S., 733).³ Includes 270,970.78 acres in the "Osage ceded reservation," which are to be deducted under the decision cited in note 2.

Withdrawals under the act of Mar. 15, 1910 (36 Stat., 237), from the passage of the act to June 30, 1913.

State.	Applied for.	Rejected before withdrawal.	Withdrawn.	Restored.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Colorado.....	975,466.03	331,476.53	569,856.73	257,399.13
Idaho.....	356,786.95	54,301.40	302,485.55	239,320.03
Montana.....	110,027.61	77,051.32	32,976.29	32,976.29
Nevada.....	1,111,952.46	481,023.22	542,011.46	275,314.27
New Mexico.....	383,951.62	13,453.68	10,000.00	10,000.00
Oregon.....	409,006.14	203,485.90	205,060.33	156,533.72
Utah.....	266,554.63	36.88	199,297.32	171,735.87
Wyoming.....	323,949.29	145,414.24	109,918.99	73,820.42
Total.....	3,938,274.73	1,306,243.17	1,971,606.67	1,217,099.76

State desert-land segregations under section 4 of the act of Aug. 18, 1894 (28 Stat., 372-422), and the acts amendatory thereof, commonly designated as the Carey Act, with the action taken thereon from the passage of the act to June 30, 1913.

State.	Applied for.	Segregated.	Rejected or relinquished.	Patented.	Reconveyed.	Time to reclaim extended.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Colorado.....	415,603.51	272,197.98	78,992.33	244,095.04	10,104.03	6,463.74
Idaho.....	3,235,900.23	1,305,764.67	1,263,847.24	25,633.03	10,104.03	62,604.95
Montana.....	609,826.46	228,973.84	374,867.59	25,633.03	10,104.03	62,604.95
Nevada.....	180,005.85	36,808.59	81,504.08	25,633.03	10,104.03	62,604.95
New Mexico.....	10,164.68	7,564.68	2,600.00	25,633.03	10,104.03	62,604.95
Oregon.....	789,019.51	357,878.84	295,201.25	51,583.13	6,014.49	45,844.09
Utah.....	606,704.00	141,814.94	368,020.83	108,716.87	3,977.23	17,397.53
Washington.....	155,649.39	155,649.39	155,649.39	108,716.87	3,977.23	17,397.53
Wyoming.....	1,770,480.78	1,334,988.77	308,540.76	108,716.87	3,977.23	17,397.53
Total.....	7,773,359.41	3,685,992.31	2,829,223.47	430,048.07	20,095.75	132,110.31

¹ Remains segregated.

Public and Indian lands entered each year ended June 30, from 1906 to 1913, inclusive.

State or Territory.	-1907	1908	1909	1910	1911	1912	1913
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Alabama.....	92,530.30	81,228.56	50,930.86	47,353.42	49,518.88	90,615.04	56,245.68
Alaska.....	7,132.16	3,834.80	10,772.33	17,508.03	15,477.69	5,244.95	103.67
Arizona.....	86,121.64	198,509.64	468,160.64	541,793.23	486,066.86	669,292.97	770,449.59
Arkansas.....	496,015.40	333,676.41	171,316.50	137,637.76	201,006.00	247,318.58	178,065.19
California.....	579,294.93	766,932.98	1,290,579.46	1,214,348.36	1,064,644.89	872,301.68	937,230.43
Colorado.....	2,483,666.69	2,127,661.99	1,983,078.58	3,994,757.50	2,272,068.99	1,354,326.05	1,458,107.84
Florida.....	109,663.03	83,072.78	125,744.65	121,837.68	144,809.48	183,061.64	96,277.34
Idaho.....	1,162,745.25	1,087,402.94	1,383,443.88	1,768,010.34	1,191,012.91	860,840.25	1,030,312.55
Illinois.....	296.30	40.00	40.00	160.02	122,810.19	71,915.69	68,775.14
Indiana.....	129.70	10.08	40.00	160.02	122,810.19	71,915.69	68,775.14
Iowa.....	195.65	1,433.69	564.04	160.02	122,810.19	71,915.69	68,775.14
Kansas.....	611,726.97	332,931.81	166,375.14	157,311.36	22,432.63	16,491.13	6,309.44
Louisiana.....	89,608.79	59,450.26	39,428.40	22,344.86	17,189.17	17,222.57	13,636.92
Michigan.....	42,828.40	46,147.59	33,813.58	19,612.94	17,189.17	17,222.57	13,636.92
Minnesota.....	324,418.22	429,315.12	385,816.56	295,177.03	239,830.59	397,158.46	191,762.18
Mississippi.....	55,645.26	35,545.37	35,908.88	29,339.15	34,440.75	27,708.14	20,699.64
Missouri.....	154,871.72	129,157.20	53,560.91	52,509.66	19,292.74	1,958.55	4,470.06
Montana.....	1,213,780.97	1,494,052.02	2,460,905.55	6,616,734.69	4,659,232.48	3,687,420.90	4,717,117.51
Nebraska.....	1,785,762.47	1,781,823.80	1,979,872.10	1,638,485.72	1,505,584.66	1,394,588.57	997,812.22
Nevada.....	47,254.63	60,131.50	78,190.07	261,125.24	312,510.88	261,188.07	173,799.66
New Mexico.....	2,758,006.91	2,850,337.11	2,542,799.18	1,924,145.46	1,377,563.07	1,050,399.79	2,324,250.89
North Dakota.....	2,256,423.56	1,383,957.19	877,649.71	807,512.18	513,357.48	384,218.11	418,685.76
Oklahoma.....	2,007,753.84	514,159.58	297,572.30	193,692.95	146,600.50	97,563.31	65,959.39
Oregon.....	951,481.34	1,021,001.29	1,091,530.56	1,050,723.53	742,049.87	715,869.45	561,810.14
South Dakota.....	1,502,411.24	2,086,171.82	2,219,560.32	2,946,827.85	1,711,629.43	696,546.70	688,658.33
Utah.....	334,827.36	469,311.88	619,802.07	577,459.86	693,770.08	549,883.11	262,863.44
Washington.....	911,327.34	825,813.57	608,546.35	560,789.20	481,459.19	382,565.57	357,223.51
Wisconsin.....	28,966.92	57,595.61	19,061.18	17,007.33	17,970.36	16,099.44	11,360.18
Wyoming.....	897,679.59	820,614.19	897,479.96	1,377,063.74	1,167,042.50	503,090.10	665,255.75
Gen. Land Office.....							40.00
Total.....	20,997,566.58	19,090,356.78	19,892,503.76	26,391,269.09	19,211,372.27	14,574,688.52	15,807,222.45

Public lands surveyed and remaining unsurveyed.

State or Territories.	Land area.	Surveyed during the fiscal year ending June 30, 1913.	Surveyed to June 30, 1913.	Unsurveyed.	Resurveyed during fiscal year June 30, 1913.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Alabama.....	32,818,560	.....	32,818,560	.....	.....
Alaska.....	378,165,760	22,887	62,604	378,103,156	.....
Arizona.....	72,857,600	791,838	22,364,862	50,492,738	75,897
Arkansas.....	33,616,000	.....	33,616,000	.....	12,038
California.....	99,898,880	302,876	78,912,454	20,986,426	.....
Colorado.....	66,341,120	37,258	63,270,587	3,070,533	251,955
Florida.....	35,111,040	.....	30,912,571	4,198,469	.....
Illinois.....	35,841,280	.....	35,841,230	.....	.....
Indiana.....	22,966,400	.....	22,966,400	.....	.....
Iowa.....	35,575,040	.....	35,575,040	.....	.....
Idaho.....	53,618,560	1,378,831	29,190,430	24,428,130	.....
Kansas.....	52,335,360	.....	52,335,360	.....	.....
Louisiana.....	29,061,760	.....	27,181,354	1,880,376	.....
Michigan.....	36,787,200	.....	36,787,200	.....	.....
Minnesota.....	51,749,120	771	49,822,947	1,926,173	.....
Mississippi.....	29,671,680	.....	29,671,680	.....	.....
Missouri.....	43,985,280	.....	43,985,280	.....	.....
Montana.....	93,296,640	2,957,755	63,574,697	29,721,943	1,269
Nebraska.....	49,157,120	.....	49,157,120	.....	.....
Nevada.....	70,285,440	453,231	40,298,835	29,986,605	30,389
New Mexico.....	78,401,920	726,068	54,758,158	23,643,762	6,154
North Dakota.....	44,917,120	.....	42,769,192	2,147,928	.....
Ohio.....	26,073,600	.....	26,073,600	.....	.....
Oregon.....	61,188,480	984,068	50,665,637	10,522,843	200
Oklahoma.....	44,424,960	.....	44,424,960	.....	.....
South Dakota.....	49,195,520	64,890	48,689,520	506,000	.....
Utah.....	52,597,760	417,135	28,162,744	24,435,016	.....
Wisconsin.....	35,363,840	.....	35,363,840	.....	.....
Washington.....	42,775,040	490,324	33,674,148	9,100,892	590
Wyoming.....	62,460,160	39,979	58,506,318	3,953,842	1,203,468
Total.....	1,820,538,240	8,668,511	1,201,433,408	619,104,832	1,581,960

NOTE.—The areas of surveyed and unsurveyed lands for South Dakota erroneously stated in prior report.

Estimated area of existing national forests June 30, 1913.

[Approximately 88 per cent is public.]

	<i>Acres.</i>		<i>Acres.</i>
Alaska.....	26,748,850	Nevada.....	5,595,310
Arizona.....	13,318,690	New Mexico.....	10,173,890
Arkansas.....	2,225,890	North Dakota.....	13,920
California.....	26,821,945	Oklahoma.....	61,640
Colorado.....	14,560,480	Oregon.....	16,023,220
Florida.....	674,970	Porto Rico.....	65,950
Idaho.....	19,379,567	South Dakota.....	1,326,172
Kansas.....	262,787	Utah.....	7,776,643
Michigan.....	163,771	Washington.....	11,684,360
Minnesota.....	1,570,850	Wyoming.....	8,633,463
Montana.....	18,977,580		
Nebraska.....	556,700	Total area.....	186,616,648
Area added to national forests during year.....			1,050,870
Area excluded from national forests during year.....			1,840,598
Area embraced in temporary forest withdrawals June 30, 1913.....			223,746
Area of existing national forests June 30, 1912.....			187,406,376
Area of existing forests June 30, 1913.....			186,616,648
Decrease in area during fiscal year ended June 30, 1913.....			789,728

National monuments.

State and name.	Date created.	Area.	State and name.	Date created.	Area.
Alaska:		<i>Acres.</i>	New Mexico:		<i>Acres.</i>
Sitka.....	Mar. 23, 1910	¹ 57.00	Chaco Canyon.....	Mar. 11, 1907	20,629.40
Arizona:			El Morro.....	Dec. 8, 1906	160.00
Grand Canyon ²	Jan. 11, 1908	¹ 806,400.00	Gila Cliff Dwellings ²	Nov. 16, 1907	160.00
Montezuma Castle.....	Dec. 8, 1906	160.00	Gran Quivira.....	Nov. 1, 1909	¹ 160.00
Navajo.....	Mar. 20, 1909	360.00	Oregon:		
Tonto ²	Dec. 19, 1907	¹ 640.00	Oregon Caves ²	July 12, 1909	¹ 480.00
Tumacacori.....	Sept. 15, 1908	10.00	South Dakota:		
Petrified Forest.....	July 31, 1911	² 25,625.60	Jewel Cave ²	Feb. 7, 1908	¹ 1,280.00
California:			Utah:		
Cinder Cone ²	May 6, 1907	¹ 5,120.00	Mukuntuweap.....	July 31, 1909	¹ 15,840.00
Lassen Peak ²	do.....	¹ 1,280.00	Natural Bridges.....	Sept. 25, 1909	² 2,740.00
Muir Woods.....	Jan. 9, 1908	295.00	Rainbow Bridge.....	May 30, 1910	160.00
Pinnacles.....	Jan. 16, 1908	¹ 2,080.00	Washington:		
Devil Postpile ²	July 6, 1911	¹ 800.00	Mount Olympus ²	Mar. 2, 1909	¹ 608,480.00
Colorado:			Wyoming:		
Wheeler ²	Dec. 7, 1908	¹ 300.00	Devils Tower.....	Sept. 24, 1906	1,152.91
Colorado.....	May 24, 1911	13,883.06	Shoshone Cavern.....	Sept. 21, 1909	210.00
Montana:			Total.....		1,508,627.97
Big Hole.....	June 23, 1910	5.00			
Lewis and Clark Cavern.....	May 16, 1911	² 160.00			

¹ Estimated area.² Under jurisdiction of Department of Agriculture.³ According to second proclamation.

Aggregate cash receipts from the disposal of public and Indian lands from May 20, 1875, to June 30, 1913.

Fiscal years.	Cash sales.	Amount of fees and commissions.	Total receipts from disposal of public lands.	Receipts from sales of Indian lands.	Miscellaneous receipts.	Aggregate receipts from all sources.
May 20, 1875, to June 30, 1880.....						\$208,059,657.14
1881.....	\$3,534,550.98	\$860,833.65	\$4,395,384.63	\$1,006,691.63	\$6,727.90	5,408,804.16
1882.....	6,628,775.92	1,124,631.15	7,753,407.07	634,617.22	6,591.75	8,394,516.04
1883.....	9,657,032.28	1,423,320.10	11,080,361.38	625,404.27	8,118.05	11,713,883.70
1884.....	10,304,582.49	1,536,410.68	11,840,993.07	938,137.26	10,274.78	12,789,405.09
1885.....	6,223,926.74	1,462,188.06	7,686,114.80	933,483.52	8,821.86	8,628,420.18
1886.....	5,757,891.06	1,654,876.25	7,412,767.31	1,607,729.63	10,587.40	9,031,084.34
1887.....	9,246,321.33	1,537,600.39	10,783,921.72	1,484,302.30	20,784.85	12,289,008.87
1888.....	11,203,071.95	1,498,000.05	12,701,072.00	821,113.77	24,951.65	13,547,137.42
1889.....	8,018,254.50	1,251,971.23	9,270,225.73	389,524.72	26,150.89	9,685,901.34
1890.....	6,349,174.24	1,121,696.07	7,470,870.31	293,062.30	16,585.00	7,780,517.61
1891.....	4,160,099.07	944,938.65	5,105,037.72	318,333.42	5,849.00	5,429,220.14
1892.....	3,322,865.01	1,064,805.26	4,387,670.27	456,681.84	15,757.58	4,860,109.69
1893.....	3,193,280.64	998,184.65	4,191,465.29	284,752.65	3,516.20	4,479,734.14
1894.....	1,653,080.71	1,021,205.08	2,674,285.79	91,981.03	1,557.50	2,767,824.32
1895.....	1,116,090.07	750,710.59	1,866,800.66	149,879.48	16,773.89	2,033,454.03
1896.....	1,053,905.59	793,557.82	1,847,463.41	214,700.42	44,837.84	2,106,361.67
1897.....	917,911.19	678,469.55	1,596,380.74	438,716.31	52,194.23	2,087,931.28
1898.....	1,291,076.10	853,265.50	2,144,341.60	100,817.49	33,336.09	2,277,985.18
1899.....	1,703,988.32	890,702.17	2,594,690.49	442,913.73	32,553.12	3,070,137.34
1900.....	2,899,731.83	1,137,081.03	4,036,812.86	239,769.39	83,175.85	4,379,758.10
1901.....	2,966,542.86	1,340,894.29	4,307,437.15	585,661.27	79,062.37	4,972,160.79
1902.....	4,139,268.47	1,740,820.18	5,880,088.65	288,666.68	93,171.85	6,261,927.18
1903.....	8,960,471.18	1,597,147.48	10,557,618.66	308,939.14	158,185.85	11,024,745.65
1904.....	7,445,902.84	1,349,990.89	8,795,893.73	333,757.62	153,690.63	9,283,341.98
1905.....	4,849,766.06	1,286,621.93	6,136,387.88	791,807.67	89,615.72	7,017,811.38
1906.....	4,885,988.82	1,642,488.56	6,528,477.38	967,532.50	89,514.02	7,585,532.90
1907.....	7,728,114.30	1,819,159.21	9,547,273.51	1,892,805.70	113,098.79	11,553,178.00
1908.....	9,760,570.19	1,731,883.57	11,492,453.76	997,972.52	225,283.18	12,716,719.45
1909.....	7,698,337.03	1,536,890.67	9,235,227.70	2,334,885.47	330,136.61	12,216,415.39
1910.....	6,342,744.75	2,028,892.35	8,371,637.10	2,037,651.68	1,054,735.28	11,463,924.06
1911.....	5,783,693.39	1,461,514.30	7,195,187.69	2,822,600.71	¹ 1,022,119.20	11,089,927.60
1912.....	5,437,502.07	1,234,216.47	6,671,718.54	2,284,638.37	¹ 1,016,791.09	9,973,048.00
1913.....	2,746,546.52	1,540,994.15	4,287,540.67	2,118,469.34	¹ 549,494.80	6,955,504.81
Total.....						462,934,077.98

¹ Includes reclamation water-right charges.

Amounts accrued and paid to States for purpose of education, or of making public roads and improvements, on account of grants of 2, 3, and 5 per cent of net proceeds of public lands lying within said States.

State.	Total to June 30, 1911.	Fiscal year 1912.	Aggregate to June 30, 1912, inclusive.
Alabama.....	\$1,077,305.32	\$599.40	\$1,077,904.72
Arizona.....		1,652.99	1,652.99
Arkansas.....	323,897.84	1,013.16	324,911.00
California.....	1,062,698.44	17,354.82	1,080,053.26
Colorado.....	445,393.06	15,355.24	460,748.30
Florida.....	133,159.79	4,176.27	137,336.06
Idaho.....	231,342.01	10,541.35	241,883.36
Illinois.....	1,187,908.89		1,187,908.89
Indiana.....	1,040,255.26		1,040,255.26
Iowa.....	633,638.10		633,638.10
Kansas.....	1,122,353.55	3,115.86	1,125,469.41
Louisiana.....	467,862.06	325.83	468,187.89
Michigan.....	586,783.64	284.88	587,068.52
Minnesota.....	586,036.69	2,246.39	588,283.08
Mississippi.....	1,069,843.91	82.71	1,069,926.62
Missouri.....	1,059,760.74	669.87	1,060,430.61
Montana.....	366,647.00	37,598.88	404,245.88
Nebraska.....	551,388.13	8,006.32	559,394.45
Nevada.....	29,518.81	2,605.77	32,124.58
New Mexico.....	110,453.47	10,587.31	121,040.78
North Dakota.....	505,262.75	23,764.36	529,027.11
Ohio.....	999,353.01		999,353.01
Oklahoma.....	55,956.06	3,161.83	59,117.89
Oregon.....	701,687.81	15,328.30	717,016.11
South Dakota.....	263,485.30	44,582.90	308,068.20
Utah.....	75,860.78	5,834.00	81,694.78
Washington.....	390,903.57	6,028.78	396,930.35
Wisconsin.....	586,304.10	104.43	586,408.53
Wyoming.....	189,517.57	23,870.07	213,387.64
Total.....	15,854,577.66	238,889.77	16,093,467.43

Amounts covered into the Treasury to the credit of the reclamation fund from the sales of public lands and fees and commissions in the several States, under the act of June 17, 1902 (32 Stat., 388).

State.	Fiscal years.		Total for 12 years ending June 30, 1912.
	1901 to 1911	1912	
Arizona.....	\$851,436.64	\$131,475.53	\$982,912.17
California.....	4,528,943.57	403,716.51	4,932,660.08
Colorado.....	5,702,393.34	458,779.07	6,161,172.41
Idaho.....	4,469,952.20	286,935.28	4,756,887.48
Kansas.....	846,335.34	73,808.36	920,143.70
Montana.....	6,660,189.93	997,595.01	7,657,784.94
Nebraska.....	1,391,133.11	199,422.85	1,590,555.96
Nevada.....	415,522.52	60,946.90	476,469.42
New Mexico.....	3,346,294.54	302,491.73	3,648,786.27
North Dakota.....	11,172,793.75	537,826.31	11,710,620.06
Oklahoma.....	5,658,789.63	76,485.48	5,735,275.11
Oregon.....	9,736,974.42	363,000.08	10,099,974.50
South Dakota.....	5,556,054.34	941,579.07	6,497,633.41
Utah.....	1,475,701.42	138,989.52	1,614,690.94
Washington.....	6,109,072.90	184,387.01	6,293,459.91
Wyoming.....	3,571,064.83	499,986.84	4,071,051.67
Total.....	71,492,652.48	5,657,425.55	77,150,078.03

Amount of collections from reclamation water-right charges, etc., during the fiscal years ended June 30, 1908, 1909, 1910, 1911, 1912, and 1913.

[No water-right charges collected prior to July 1, 1907.]

States and land offices.	1908	1909	1910	1911	1912	1913 ¹
California:						
Los Angeles.....			\$42,269.51	\$10,602.48	\$26,257.52	\$8,113.00
Redding.....					300.00	
Idaho:						
Hailey.....	\$5,706.18	\$7,703.66	184,332.69	180,470.71	106,619.86	41,634.51
Montana:						
Billings.....	38,431.85	15,999.45	27,025.22	54,140.32	73,732.73	27,476.62
Glasgow.....			6,453.25	3,566.00	1,249.60	2,715.98
Great Falls.....	1,631.00	18,944.52	14,926.73	10,960.16	36,357.44	9,699.60
Miles City.....		199.50	8,625.00	4,826.25	4,213.32	4,068.52
Nebraska:						
Alliance.....		4,767.47	68,667.09	26,092.00	77,820.31	36,263.01
Nevada:						
Carson City.....	8,447.95	15,926.02	58,103.13	75,873.55	53,959.25	15,965.71
New Mexico:						
Roswell.....		7,626.75	72,483.60	70,949.35	25,917.20	15,370.60
North Dakota:						
Williston.....	423.00	555.50	4,397.47	5,552.18	3,897.60	6,337.61
Oregon:						
La Grande.....	350.00	6,114.60	61,011.44	73,658.17	55,714.04	6,325.87
Lakeview.....		7,150.48	66,112.00	115,107.00	84,028.20	15,769.50
South Dakota:						
Bellefourche.....			39,880.62	91,103.95	22,350.80	33,484.64
Rapid City.....		6,969.26	60.00			
Washington:						
North Yakima.....		11,316.82	50,457.47	103,047.28	242,109.56	23,765.35
Waterville.....		3,375.20	22,475.50	27,842.50	24,176.25	1,309.00
Wyoming:						
Cheyenne.....		14.00	3,839.80	571.40	1,754.00	1,235.40
Lander.....	8,412.53	52,827.70	39,465.83	38,550.99	75,084.63	24,637.57
Total.....	63,402.51	159,490.93	770,586.35	892,414.29	914,542.31	274,172.57
Total to June 30, 1913.....						3,074,608.96

¹ Embraces collections to Dec. 31, 1912. See act Aug. 9, 1912 (37 Stat., 265).

* * * * *

REPORT OF THE COMMISSIONER OF PENSIONS.

DEPARTMENT OF THE INTERIOR, BUREAU OF PENSIONS,

Washington, D. C., September 18, 1913.

SIR: I have the honor to submit the following statements, summaries, and tabulations, in report of the operations of the Bureau of Pensions for the fiscal year ended June 30, 1913:

GENERAL STATEMENT.

On July 1, 1912, the total number of pensioners of all classes borne on the pension roll was 860,294. On June 30, 1913, the total number was 820,200, a net loss of 40,094 as shown in the following summary (see Exhibit 1):

Gains and losses in pension roll during fiscal year 1913.

Losses:	
By death.....	57,459
By remarriage.....	888
By minors attaining the age of 16 years.....	983
By failure to claim for 3 years (sec. 4719, R. S.).....	202
By all other causes.....	320
Total.....	59,852

Gains:

By original allowances.....	19,276
By restoration and renewal allowances.....	482
Total.....	19,758
Net loss.....	40,094

There were 497,263 survivors of the Civil War on the roll at the beginning of the year and 462,379 at its close, a net loss of 34,884. The losses to this class by death during the year were 36,064—about 7½ per cent—and the original allowances therein were 1,272.

Of the 820,200 pensioners on the roll at the close of the year, 503,633 were persons who rendered service in the Army or Navy of the United States, including 328 Army nurses, the remaining 316,567 being pensioned as widows and dependents. The number of individuals who served in the Army and Navy of the United States during the Civil War is estimated at 2,213,365.

The following summary shows the pensioners on the roll, in numbers, by classes, at the close of each of the fiscal years 1912 and 1913, with the net gain or loss in each class and totals at the close of the second year:

Pensioners on the roll June 30, 1913, and June 30, 1912.

	1913	1912	Gain.	Loss.
Regular establishment:				
Invalids.....	14,561	14,373	188	.....
Widows.....	2,904	2,869	35	.....
Minor children.....	175	171	4	.....
Mothers.....	1,145	1,129	16	.....
Fathers.....	164	159	5	.....
Brothers, sisters, sons, and daughters.....	2	4	.....	2
Helpless children.....	7	8	.....	1
Civil War:				
Act of May 11, 1912—				
Survivors.....	379,064	13,246	365,818	.....
Act of Feb. 6, 1907—				
Survivors.....	16,241	333,579	.....	317,333
General law—				
Invalids.....	61,800	103,237	.....	41,437
Nurses.....	325	362	.....	37
Widows.....	60,265	64,135	.....	3,870
Minor children.....	195	351	.....	156
Mothers.....	1,053	1,413	.....	360
Fathers.....	137	202	.....	65
Brothers, sisters, sons, and daughters.....	403	331	72	.....
Helpless children.....	466	515	.....	49
Act of June 27, 1890—				
Invalids.....	5,274	47,201	.....	41,927
Minor children.....	3,839	4,063	.....	224
Helpless children.....	441	416	25	.....
Act of Apr. 19, 1908—				
Widows without children.....	228,571	227,907	664	.....
Widows with children.....	4,293	5,040	.....	747
War with Spain:				
Invalids.....	24,157	23,841	316	.....
Nurses.....	3	.....	3	.....
Widows.....	1,238	1,238	.....	.....
Minor children.....	274	304	.....	30
Mothers.....	2,860	2,951	.....	91
Fathers.....	473	508	.....	35
Brothers, sisters, sons, and daughters.....	6	6	.....	.....
Helpless children.....	4	2	2	.....
War of 1812:				
Widows.....	199	238	.....	39
War with Mexico:				
Survivors.....	1,142	1,313	.....	171
Widows.....	5,123	5,533	.....	410
Indian wars:				
Survivors.....	1,066	1,210	.....	144
Widows.....	2,330	2,439	.....	109
Total.....	820,200	860,294	367,148	407,242
Net loss.....	.....	.....	.....	40,094

Exhibit 2 shows the first payments made on new issues during the year, by number and amount in each class, the final totals being 433,995 payments with an amount paid of \$18,250,225.26, as compared with 78,781 first payments during the preceding year, involving an amount of \$4,096,502.81. This large increase in number of first payments was due to allowances under the act of May 11, 1912, the number of Civil War survivors on the roll under said act being increased from 13,246 at the beginning of the year to 379,064 at its close. The number of new issues which remained unpaid at the close of the year was 6,870, upon which there was due a total of \$355,768.10.

The total amount paid as attorney's fees upon claims allowed during the year was \$108,064.16.

The first payments made on new certificates each year for the past five years, with the averages, and the averages of first payments by classes during the past year are shown as follows:

First payments during the last five years.

Fiscal year.	Number.	Amount.	Average.
1913.....	433,995	\$18,250,225	\$42.05
1912.....	78,781	4,096,502	52.00
1911.....	93,632	4,842,925	51.72
1910.....	91,448	4,858,504	52.13
1909.....	124,634	6,489,416	52.07

Average first payments in each class.

Average value of first payments:

In original cases.....	\$88.78
In original regular establishment cases.....	104.46
In original act May 11, 1912, cases.....	74.47
In original act Feb. 6, 1907, cases.....	192.93
In original general law, Civil War, cases.....	136.45
In original act June 27, 1890, cases.....	261.20
In original act Apr. 19, 1908, cases.....	62.53
In original War with Spain cases.....	254.90
In increase and reissue cases.....	39.83
In original War with Mexico cases.....	150.03
In original Indian wars cases.....	192.54

The appropriations and disbursements for the fiscal year and the unexpended balances at its close, as tabulated in Exhibit 3, are summarized as follows:

Appropriations and disbursements for pensions and expenses of medical examination and payment of pensions fiscal year ended June 30, 1912.

Appropriation for pensions.....	\$179,500,000.00
Repayments to the appropriation.....	19,876.45
Total amount available for pensions.....	179,519,876.45
Amount disbursed.....	174,171,660.80
Unexpended balance.....	5,348,215.65
Appropriation for medical examinations.....	300,000.00
Amount disbursed.....	104,166.23
Unexpended balance.....	193,833.77

Appropriations for salaries, clerk hire, rent, and contingent expenses pension agencies, and disbursing office.....	\$446, 145. 84
Repayment to contingent expenses.....	14. 60
Total amount available.....	446, 160. 44
Amount disbursed and outstanding obligations.....	417, 595. 83
Unexpended balance.....	28, 564. 61

The item in the above summary of \$104,166.23 for fees and expenses of examining surgeons does not include such fees and expenses for the last quarter of the year, as the accounts for that period were not received until after the close of the year. It is estimated that the cost of medical examinations for the full year will be \$148,832, and the item is so counted in the cost of administration.

The appropriations for the year to cover salaries and expenses of the bureau, as distinct from the pension-paying service and including the field service, with the disbursements therefrom and unexpended balances, are summarized as follows:

Appropriations and disbursements for salaries, Bureau of Pensions, fiscal year ended June 30, 1913.

Appropriation for salaries, Bureau of Pensions, including \$812.66 continued from appropriation of preceding year by joint resolution for salary of second deputy commissioner.....	\$1, 478, 912. 66
Repayments to the appropriation.....	105. 34
Total amount available.....	1, 479, 018. 00
Amount disbursed.....	1, 452, 043. 18
Unexpended balance.....	26, 974. 82
Appropriation for employment of temporary clerks.....	300, 000. 00
Amount disbursed.....	274, 433. 45
Unexpended balance.....	25, 566. 55
Appropriations for salaries, per diem and expenses, special examiners.....	273, 500. 00
Amount disbursed.....	203, 463. 52
Unexpended balance.....	70, 036. 48

In addition to the disbursements above noted, there was expended for bureau supplies, out of various appropriations, during the year the sum of \$46,878.61, making the total cost of administration for the year \$2,543,246.59.

Exhibit 4 shows the disbursements for pensions, fees of examining surgeons, salaries, clerk hire, rent, and contingent expenses, by the pension agents to February 1, 1913, and by disbursing clerks Bureau of Pensions, and the department, from that date to the close of the year. The disbursing clerk Bureau of Pensions being authorized to make disbursements only on account of pensions, the payments on account of fees of examining surgeons, salaries, and clerk hire, disbursing office, Bureau of Pensions, were made from February 1, 1913 by the disbursing clerk of the department, and from that date claims upon the contingent fund and upon the amount of \$22,000 made available from the clerk-hire appropriation by the appropriation acts of August 17, 1912, and March 3, 1913, to meet the expenses of consolidation of the pension agencies and equipment of the disbursing office in the bureau, were paid by Treasury settlements.

The amount disbursed for pensions from July 1, 1790, to June 30, 1865, as heretofore given, is \$96,445,444.23.

The following table shows the disbursements for pensions by fiscal years since that period, with the cost of maintenance of the pension system and the number of pensioners on the roll at the close of each year:

Disbursements for pensions and maintenance of pension system, 1866 to 1913.

Fiscal year.	Paid as pensions.	Cost, maintenance, and expenses.	Total.	Number of pensioners.
1866.....	\$15,450,549.88	\$407,165.00	\$15,857,714.88	126,722
1867.....	20,784,789.69	490,977.35	21,275,767.04	155,474
1868.....	23,101,509.36	553,020.34	23,654,529.70	169,643
1869.....	28,513,247.27	564,526.81	29,077,774.08	187,963
1870.....	29,351,488.78	600,997.86	29,952,486.64	198,686
1871.....	28,518,792.62	863,079.00	29,381,871.62	207,495
1872.....	29,752,746.81	951,253.00	30,703,999.81	232,229
1873.....	26,982,063.89	1,003,200.64	27,985,264.53	238,411
1874.....	30,206,778.99	966,794.13	31,173,573.12	236,241
1875.....	29,270,404.76	982,695.35	30,253,100.11	234,821
1876.....	27,936,209.53	1,015,078.81	28,951,288.34	232,137
1877.....	28,182,821.72	1,034,459.33	29,217,281.05	232,104
1878.....	26,786,009.44	1,032,500.09	27,818,509.53	223,998
1879.....	33,664,428.92	837,734.14	34,502,163.06	242,755
1880.....	56,689,229.08	935,027.28	57,624,256.36	250,802
1881.....	50,583,405.35	1,072,059.64	51,655,464.99	268,830
1882.....	54,313,172.05	1,466,236.01	55,779,408.06	285,697
1883.....	60,427,573.81	2,591,848.29	63,019,422.10	303,658
1884.....	57,912,387.47	2,835,181.00	60,747,568.47	322,756
1885.....	65,171,937.12	3,392,576.34	68,564,513.46	345,125
1886.....	64,091,142.90	3,245,016.61	67,336,159.51	365,783
1887.....	73,752,997.08	3,753,400.91	77,506,397.99	406,007
1888.....	78,950,501.67	3,515,057.27	82,465,558.94	452,557
1889.....	88,842,720.58	3,466,968.40	92,309,688.98	489,725
1890.....	106,093,850.39	3,526,382.13	109,620,232.52	537,944
1891.....	117,312,690.50	4,700,636.44	122,013,326.94	676,160
1892.....	139,394,147.11	4,898,665.80	144,292,812.91	876,068
1893.....	156,906,637.94	4,867,734.42	161,774,372.36	966,012
1894.....	139,986,726.17	3,963,976.31	143,950,702.48	969,544
1895.....	139,812,294.30	4,338,020.21	144,150,314.51	970,524
1896.....	138,220,704.46	3,991,375.61	142,212,080.07	970,678
1897.....	139,949,717.35	3,987,783.07	143,937,500.42	976,014
1898.....	144,651,879.80	4,114,091.46	148,765,971.26	993,714
1899.....	138,355,052.95	4,147,517.73	142,502,570.68	991,519
1900.....	138,462,130.65	3,841,706.74	142,303,837.39	993,529
1901.....	138,531,483.84	3,868,795.44	142,400,279.28	997,735
1902.....	137,504,267.99	3,831,378.96	141,335,646.95	999,446
1903.....	137,769,653.71	3,993,216.79	141,762,870.50	996,545
1904.....	141,093,571.49	3,849,366.25	144,942,937.74	994,762
1905.....	141,142,861.33	3,721,832.82	144,864,694.15	998,441
1906.....	139,000,288.25	3,523,269.51	142,523,557.76	985,971
1907.....	138,155,412.46	3,809,110.44	141,964,522.90	967,371
1908.....	153,093,086.27	2,800,963.56	155,894,049.83	951,687
1909.....	161,973,703.77	2,852,583.73	164,826,287.50	946,194
1910.....	159,974,056.08	2,657,673.86	162,631,729.94	921,083
1911.....	157,325,160.35	2,517,127.06	159,842,287.41	892,088
1912.....	152,986,433.72	2,448,857.31	155,435,291.03	860,294
1913.....	174,171,660.80	2,543,246.59	176,714,907.39	820,200
Total.....	4,461,094,380.45	125,871,965.64	4,586,966,346.09	.....

The amounts paid to pensioners of all classes as chargeable to the several wars and to the regular establishment of the Army and Navy in times of peace, from the foundation of the Government to the close of the fiscal year 1913, are as follows:

Amount paid to pensioners, 1790 to 1913.

War of the Revolution (estimated).....	\$70,000,000.00
War of 1812 (service pension).....	45,923,014.46
Indian wars (service pension).....	12,241,273.61
War with Mexico (service pension).....	47,632,572.34
Civil War.....	4,294,596,944.47
War with Spain and Philippine insurrection.....	42,185,230.84
Regular establishment.....	28,461,369.52
Unclassified.....	16,499,419.44
Total.....	4,557,539,824.68

Exhibit 5 classifies the pensioners and amounts paid by the States, Territories, and other outlying possessions, and foreign countries; and Exhibits 6 and 7 give the numbers of pensioners, by the various classes and rates, under the general pension laws and special acts of Congress, respectively, the rates of less than \$6 per month representing allowances from the Navy pension fund under section 4757, Revised Statutes, United States.

Exhibit 8 presents the pensioners on the roll at the close of the year by the various classes in numbers as subdivided by grants under the general provisions of the pension laws and by special acts, with the annual value of each number according to such subdivision; also the average annual value of each pension with all classes combined and under a further general classification by laws and wars. The corresponding table for the preceding fiscal year, 1912, is here given for purposes of comparison:

Number of pensioners in each class under the general pension laws and "special acts" of Congress, together with the annual value of each on the roll at the close of the fiscal year ended June 30, 1912.

Classes.	General laws.		Special acts.	
	Number.	Annual value.	Number.	Annual value.
Invalids, regular establishment.....	14,164	\$2,367,809.46	209	\$53,598.00
Widows, etc., regular establishment.....	3,926	681,576.00	414	159,352.00
Survivors, act May 11, 1912.....	13,246	3,445,260.00		
Survivors, act Feb. 6, 1907.....	333,579	58,846,851.00		
Invalids, general law.....	87,044	23,742,331.50	16,193	5,291,466.00
Nurses.....	279	40,176.00	83	13,788.00
Widows, etc., general law.....	63,148	9,557,700.00	3,799	783,696.00
Invalids, act June 27, 1890.....	47,201	6,679,767.00		
Minors, etc., act June 27, 1890.....	4,479	803,184.00		
Widows, act Apr. 19, 1908.....	232,947	33,721,656.00		
Invalids, War with Spain.....	23,424	2,832,378.44	417	89,922.00
Widows, etc., War with Spain.....	4,793	739,472.00	216	54,732.00
Widows, War of 1812.....	224	32,256.00	14	3,744.00
Survivors, War with Mexico.....	1,172	292,032.00	141	34,836.00
Widows, War with Mexico.....	5,282	760,608.00	251	38,908.00
Survivors, Indian wars.....	937	89,952.00	273	49,824.00
Widows, Indian wars.....	2,365	340,560.00	74	10,896.00
Total.....	838,210	144,973,569.40	22,084	6,584,572.00

Total number of pensioners..... 860,294

Total annual value..... \$151,558,141.40

Average value of each pension:

All classes.....	176.17
Regular establishment.....	174.33
Act May 11, 1912.....	260.09
Act Feb. 6, 1907.....	176.41
General law, Civil War.....	221.71
Act June 27, 1890.....	144.79
Act Apr. 19, 1908.....	144.76
War with Spain.....	128.82
Survivors, Civil War.....	197.09

DISBURSING OFFICE AND PAYMENT OF PENSIONS WITHOUT SEPARATE VOUCHERS.

An important part of the bureau's operations during the year was in carrying out the provisions of the appropriation act of August 17, 1912 (37 Stats., 311) for the establishment in the bureau of a disbursing office for the payment of pensions, to take the place of the 18 pension agencies, and the adoption of a system of pension payments by checks drawn without separate vouchers or receipts, substantially as recommended in the report of the commissioner for the fiscal year ended June 30, 1911.

Under the terms of the law this system of payment without vouchers was to be carried into effect not later than January 1, 1913, and the disbursing office was to be in operation, by transfer and consolidation of the clerical force, records, and equipment of the pension agencies, on February 1, 1913.

The 18 pension agencies—one having quarters in the bureau building and the remaining 17 being stationed in leading cities elsewhere throughout the country—were arranged in three groups of 6 agencies each, with quarterly payment periods beginning on the 4th day of January, April, July, and October for the first group, on the 4th day of February, May, August, and November for the second group, and on the 4th day of March, June, September, and December for the third group, pursuant to the provisions of the act of March 3, 1891 (26 Stats., 1082).

The problem before the bureau, therefore, was to carry out the important changes so prescribed, each involving the entire pension-paying service, concurrently, and without retarding payments according to the periods fixed by law, as above noted, and its presentation in the midst of adjudication of the half million of claims filed under the act of May 11, 1912, with an average daily output of nearly 1,900 new certificates to be enrolled, computed, and paid, for periods involving fractions of quarters, added greatly to its difficulties.

The plan decided upon and carried out without material variation was to inaugurate the system of payment without vouchers with the December, 1912, payment of the third group of agencies, the second group to be on the way to Washington during this payment, and after completion of its November, 1912, payment, the first group to be the next to make payment under the new system, and the third group to come in during the course of this payment, leaving only the first group to be brought in after completion of its January, 1913, payment at the close of the month, and the second group to be then in position to make its first payment without vouchers, beginning February 4, 1913, as a part of the disbursing office under the direction of a disbursing clerk to take charge on February 1, 1913.

The pensioners of each group were notified of the changes to be made with the checks mailed them for the preceding quarter, and it is due the officials immediately in charge to say that, owing chiefly to their care and foresight, the work of removal and consolidation, involving the packing and shipment of tons of valuable records, machinery, and other equipment, was carried out without appreciable loss or damage, and the system of payment dispensing with separate vouchers was inaugurated under departmental direction, without interruption or material delay in the quarterly and other

payments, nearly one month in advance of the date set. It is further to be noted that this latter change appears to have met with general approval thus far, since it has received the commendation of many pensioners and no formal complaint or criticism of consequence, such as might be taken to question its merits as a system, has been offered.

The cost of the work, including new equipment for the disbursing office in the way of modern office appliances, was kept well within the amount that would have been expended for clerk hire under a continuance of the pension agencies, as the services of some 50 clerks were dispensed with by the consolidation and \$22,000 of the amount appropriated for clerk hire by the act of August 17, 1912, was set aside by provisions of said act and the act of March 3, 1913 (Public, No. 425), to meet the expenses incident to consolidation of the agencies and purchase and repair of furniture, filing cabinets, adding machines, addressing machines, typewriters, check-signing machines, and other labor-saving devices for the use of the disbursing office. The expenditures for such purposes amounted on June 30, 1913, to \$11,811.58.

Exhibit 9 is a statement of pension certificates issued during the year. The following summary shows the number by classes:

Pension certificates issued during the fiscal year.

Originals.....	19,346	Renewals.....	558
Increases.....	30,532	Supplementals.....	1,128
Additional.....	6		
Reissues.....	391,959	Total.....	443,622
Restorations.....	93		

The classes may be defined as follows:

Originals.—Cases in which no pension has before been granted.

Increases.—Cases in which increased rates are granted.

Additional.—Issues under the act of June 27, 1890, in lieu of pension under the general law.

Reissues.—Issues to allow for additional disabilities under the general law, to correct errors in former issues, and to allow pension under the general law, and under the acts of February 6, 1907, and May 11, 1912, in lieu of pension under other laws.

Restorations.—Issues to restore to the roll from date of last payment.

Renewals.—Issues to renew pension from a date new title is shown.

Supplementals.—Cases in which title exists under different laws and issue is made under one law for a period not covered by the other issue.

The number of pension certificates issued in the last 10 years is as follows:

Pension certificates issued during the last 10 years

1904.....	153,938	1910.....	97,242
1905.....	185,242	1911.....	92,336
1906.....	136,905	1912.....	90,922
1907.....	236,516	1913.....	443,622
1908.....	328,676		
1909.....	123,742	Total.....	1,889,141

The number of certificates issued last year was the largest issued in any year in the history of the bureau, exceeding the issue of 1908 by 114,946. The increase in certificates was due to the large number of claims adjudicated under the act of May 11, 1912.

In addition to pension certificates, as above stated, there were also made during the year 4,550 reissues in lieu of certificates lost or destroyed, and allowances of accrued pension made in 12,794 cases, being issues for payment, in cases of deceased pensioners, from date of last payment to date of death.

Exhibit 10 is a summary of the pending files of the bureau at the close of the year, showing the number of claims of each class on file, as well as the number of each class based upon disabilities incurred or service rendered in each of the wars and in the regular establishment.

The number of applications pending at the close of the year was 83,581, as against 422,464 pending at the beginning of the year, the decrease being due to the fact that almost all of the 406,048 claims filed in May and June, 1912, under the act of May 11, 1912, were adjudicated during the past year.

The following is a recapitulation of the pending files:

Claims pending at close of fiscal year June 30, 1913.

Civil War.....	73,089	Old wars.....	9
War with Spain.....	6,973	Regular establishment.....	3,087
Mexican War.....	241		
Indian wars.....	179	Total.....	83,581
War of 1812.....	3		

In addition to the above there are many claims in the abandoned files of the bureau, and if the prosecution of any of these claims is resumed and material evidence filed therein they will be restored to the pending files for adjudication.

There were also pending at the close of the year 12 claims for military bounty-land warrants.

ACT OF FEBRUARY 6, 1907.

From the date of its approval to June 30, 1913, there were 604,107 certificates issued under the act of February 6, 1907; but of these, only 23,401 were original allowances, or pensions granted to persons never before on the roll.

This act has been superseded by the act of May 11, 1912, as all survivors of the Mexican War are granted \$30 per month by the last-named act, and the rates provided by it for survivors of the Civil War exceed the rates under the former act.

ACT OF APRIL 19, 1908.

The second section of the act of April 19, 1908, grants pension at the rate of \$12 per month to widows of persons who served 90 days or more in the Army or Navy of the United States during the Civil War, and who were honorably discharged, without regard to their pecuniary condition, if they were married prior to June 27, 1890.

The records show that prior to the close of the last fiscal year 99,070 certificates had been issued under this law.

While this is the number of certificates that have been issued under this act since its passage, the number of widow pensioners now borne on the roll thereunder is very much larger. As the first section of this act increased from \$8 to \$12 per month the pensions of all widows on

the roll under the act of June 27, 1890, the names of all widows on the roll under that law were transferred to the roll under the act of April 19, 1908, immediately after its enactment.

Since 1908 no widow pensioners have been borne on the roll under the act of June 27, 1890.

ACT OF MAY 11, 1912.

This act grants pensions according to the length of service to persons who served 90 days or more in the military or naval service of the United States during the Civil War and were honorably discharged, who have reached certain ages, at rates as indicated in the following table:

Length of service.

Age.	90 days.	6 months.	1 year.	1½ years.	2 years.	2½ years.	3 years.
62.....	\$13.00	\$13.50	\$14.00	\$14.50	\$15.00	\$15.50	\$16.00
66.....	15.00	15.50	16.00	16.50	17.00	18.00	19.00
70.....	18.00	19.00	20.00	21.50	23.00	24.00	25.00
75.....	21.00	22.50	24.00	27.00	30.00	30.00	30.00

It also grants pensions at the maximum rate, \$30 per month, without regard to age or length of service, to persons who served in the military or naval service during the Civil War and received honorable discharges, and who were wounded in battle or in line of duty and are now unfit for manual labor by reason thereof, or who from disease or other causes incurred in line of duty resulting in their disabilities are now unable to perform manual labor.

It also provides a rate of \$30 per month for surviving soldiers and sailors of the Mexican War who served 60 days or more and were honorably discharged.

From the date of approval of this act to the close of the last fiscal year, June 30, 1913, the bureau received 504,938 applications for pension or increase of pension thereunder, and during that time 429,369 certificates were issued under said act. Only 894 of these, however, were original allowances, or pensions granted to persons never before on the roll under other laws.

By an act approved March 4, 1913, section 5 of this act was amended so as to read as follows:

SEC. 5. That it shall be the duty of the Commissioner of Pensions, as each application for pension filed under this act is adjudicated, to cause to be kept a record showing the name, length of service, and age of each claimant, the monthly rate of payment granted to or received by him, and the county and State of his residence, and shall at the end of the fiscal year nineteen hundred and fourteen tabulate the records so obtained by States and counties, and to furnish certified copies thereof upon demand and payment of such fee therefor as is provided by law for certified copies of records in the executive departments; and that further increase of rate under this act on account of advancing age shall be made without further application by pensioner and shall take effect and commence from the date he is shown by the aforesaid record to have attained the age provided by this act as a basis of rating: *Provided*, That where a claim has been heretofore adjudicated and the record therein does not sufficiently establish the date of birth of the soldier or sailor pensioner nothing herein shall prevent such further investigation as is deemed necessary in order to establish a record upon which future increases of rate under this act, on account of advancing age, may be possible, the object being to advance automatically the rate of pension, as provided for by this act, without unnecessary expense to the pensioner.

In all claims adjudicated under said act since this amendment the dates of birth of the applicants have been determined and a record made of the same and certificates issued in which the dates of commencement of all increases, whether in the past or in the future, are fixed. All such pensioners will therefore receive the increased rates promptly upon arriving at the age entitling them to the same without making any application therefor.

The act making appropriations for the sundry civil expenses of the Government for the fiscal year ended June 30, 1913, approved August 24, 1912, appropriated \$300,000, or so much thereof as might be necessary, to employ temporarily extra clerks to aid in the work incident to the adjudication of claims filed under this act, none of such extra clerks to be continued in the service beyond the close of the year without further legislation. Between three and four hundred extra clerks were employed during the greater part of the year, and with this augmentation of the force of the bureau the claims were rapidly adjudicated, so that by the close of the year the work thereon was practically current. Claims under this act are now being promptly adjudicated as soon as the evidence necessary to determine their merits is furnished.

TEN YEARS' SUMMARY.

The following table shows the operations of the bureau in the adjudication of pension claims each year for the past 10 years. "No benefit cases" are allowances under one law when the claimants are already in receipt of pension at an equal or higher rate under another law. As two pensions under different laws can not be paid to the same person covering the same period, the applicant in a case of this kind is permitted to elect which pension he will receive.

Summary of work for 10 years ended June 30, 1913.

Year.	Cases on hand.	Office force.	Applications filed.	Admissions.	Rejections.	No benefit cases.	Total number of cases adjudicated.
1904.....	285,523	1,734	254,333	151,211	108,114	8,725	268,050
1905.....	220,822	1,709	217,435	182,267	81,853	4,915	268,975
1906.....	182,453	1,634	201,322	138,809	82,938	4,943	226,690
1907.....	356,181	1,534	440,517	238,249	60,573	3,892	302,715
1908.....	123,483	1,464	185,622	325,140	59,449	3,403	387,992
1909.....	66,226	1,385	162,009	123,610	52,199	1,772	177,581
1910.....	47,295	1,317	132,012	97,207	38,032	1,198	136,437
1911.....	36,793	1,222	120,814	92,274	30,980	1,065	124,319
1912.....	422,464	1,172	508,812	91,120	24,925	623	116,668
1913.....	83,531	1,169	139,565	444,558	26,576	229	471,363

SPECIAL ACTS.

Since 1861 there have been allowed by special acts of Congress 42,337 pensions and increases of pensions, of which 22,016 are now on the roll, with an annual face value of \$6,699,096. Only a part of this is properly chargeable to special acts, as most of the beneficiaries had been previously pensioned under general laws at lower rates.

From June 30, 1912, and thereafter during the Sixty-second Congress, 2,871 persons were included in the special acts passed at the rates specified in the summary following:

Pensions granted by special act during the Sixty-second Congress, subsequent to June 30, 1912.

Rates specified.	Number granted.	Rates specified.	Number granted.	Rates specified.	Number granted.
\$100.....	3	\$20.....	398	Inoperative:	
\$50.....	98	\$18.....	6	\$50.....	8
\$40.....	1	\$17.....	6	\$40.....	4
\$45.....	2	\$16.....	32	\$30.....	9
\$40.....	116	\$15.....	20	\$30.....	33
\$38.....	164	\$14.....	2	\$24.....	16
\$35.....	2	\$12.....	403	\$20.....	3
\$30.....	972	\$10.....	15	\$16.....	4
\$25.....	16	\$8.....	9	\$12.....	4
\$24.....	518	\$6.....	7	Total.....	2,871

Of the above, 461 were granted to persons not in receipt of a pension and 2,410 to persons then receiving smaller pensions.

The annual value of said special-act pensions is \$864,624, and the annual increase due to the same is \$407,157.

The following statement shows the number of pensions and increases of pensions granted by special acts during each Congress since March 4, 1861:

Number of pensions granted by special acts each Congress since Mar. . . 1861.

Congress.	Number.	Congress.	Number.
Thirty-seventh (1861-1863).....	12	Fifty-first (1889-1891).....	1,388
Thirty-eighth (1863-1865).....	27	Fifty-second (1891-1893).....	217
Thirty-ninth (1865-1867).....	138	Fifty-third (1893-1895).....	119
Fortieth (1867-1869).....	275	Fifty-fourth (1895-1897).....	378
Forty-first (1869-1871).....	85	Fifty-fifth (1897-1899).....	694
Forty-second (1871-1873).....	167	Fifty-sixth (1899-1901).....	1,391
Forty-third (1873-1875).....	182	Fifty-seventh (1901-1903).....	2,171
Forty-fourth (1875-1877).....	98	Fifty-eighth (1903-1905).....	3,355
Forty-fifth (1877-1879).....	230	Fifty-ninth (1905-1907).....	6,030
Forty-sixth (1879-1881).....	96	Sixtieth (1907-1909).....	6,600
Forty-seventh (1881-1883).....	216	Sixty-first (1909-1911).....	9,649
Forty-eighth (1883-1885).....	598	Sixty-second (1911-1913).....	6,350
Forty-ninth (1885-1887).....	856	Total.....	42,337
Fiftieth (1887-1889).....	1,015		

CRIMINAL AND CIVIL SUITS.

There were 61 new cases presented by the bureau to the Department of Justice for prosecution on account of offenses against the pension laws, and indictments were found in a like number of cases. There were 51 cases brought to trial during the year, in 49 of which convictions were secured. At the close of the year there were 95 cases pending in the hands of United States attorneys.

Three civil suits were disposed of, two by judgments obtained in favor of the Government and one by discontinuance at the instance of the United States attorney. There were two suits pending at the close of the year.

The sum of \$2,523.62 was recovered through refundments.

BOUNTY-LAND WARRANTS.

During the year four original bounty-land warrants were issued, three for 160 acres each and one for 80 acres, aggregating 560 acres.

A duplicate warrant was also issued in lieu of one for 40 acres that had been lost. Service to give title to bounty land must have been for at least 14 days, or in a battle, prior to March 3, 1855, and if in the Regular Army or Navy must have been in some war.

The following statement shows the total number of bounty-land warrants of all classes issued by the bureau (including partial estimate of those issued for service in the Revolutionary War) and the number of acres granted to June 30, 1913:

Bounty-land warrants issued to June 30, 1913.

	Number.	Acres.
War of the Revolution.....	18,663	2,666,080
War of 1812, acts prior to 1850.....	29,471	4,891,520
Act of 1847, Mexican War.....	88,274	13,213,640
Act of 1850, War of 1812, Mexican and Indian wars.....	189,146	13,168,560
Act of 1852, War of 1812, Mexican and Indian wars.....	11,992	694,400
Act of 1855, War of 1812, Mexican and Indian wars.....	263,148	34,158,630
Total.....	598,694	68,792,830

This bureau has no record of the warrants issued directly from the General Land Office under special acts of Congress or of those issued on account of the Virginia military land grants satisfied by the United States after the cession of the Northwestern Territory, and they are not included in the above table.

* * * * *

Very respectfully,

GAYLORD M. SALTZGABER,
Commissioner of Pensions.

The SECRETARY OF THE INTERIOR.

STATISTICAL TABLES.

EXHIBIT 1.—Pensioners added to and dropped from the roll at the beginning and at the close of the year and the amount disbursed to each class of pensioners during the year ended June 30, 1913.

	Number of pensioners at beginning of year.	Gains to roll.		Gains to classes by transfer from other classes.				Losses to the roll by—					Number of pensioners at end of year.	Disbursements.		
		Original.	Restoration.	Restoration.	Original.	Re- new- al.	Ad- diti- onal.	Re- issue.	Death.	Re- mar- riage.	Lim- ita- tion.	Fal- lure to claim.			Other causes.	
Regular establishment.																
Army invalids.....	11,020	603	1	5	2	.....	.....	2	443	.....	21	31	112	11,026	\$1,927,215.98	
Army widows, etc.....	2,824	200	1	2	.....	.....	.....	.....	111	31	9	1	2,874	567,583.65		
Navy invalids.....	3,353	398	4	11	2	.....	.....	.....	161	.....	5	25	3,635	693,163.29		
Navy widows, etc.....	1,516	101	.....	.....	.....	.....	.....	1	65	16	11	2	1,623	319,178.96		
Civil War.																
Act May 11, 1912:																
Army.....	12,354	735	15	21	2	4	8	368,513	14,195	.....	1	20	696	366,740	51,586,417.21	
Navy.....	82	119	2	1	1	1	.....	11,852	531	.....	.....	.....	13	12,324	1,709,604.71	
Act Feb. 6, 1907:																
Army.....	321,825	272	20	4	.....	.....	1	308	12,207	.....	61	96	294,509	15,557	35,109,236.77	
Navy.....	11,754	27	.....	.....	.....	.....	2	29	582	.....	3	6	10,537	684	1,267,233.76	
General law:																
Army invalids.....	102,186	34	4	7	.....	1	156	2,137	6,983	.....	9	12	36,858	61,063	25,496,691.75	
Army nurses.....	352	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	325	50,556.63	
Army widows, etc.....	66,034	677	3	255				318	5,250	174	197	7	12	1	61,046	9,863,414.34
Navy invalids.....	1,051	.....	.....	.....	.....	.....	1	61	101	.....	.....	1	274	737	277,845.91	
Navy widows, etc.....	913	13	.....	2	.....	.....	.....	21	73	2	1	.....	.....	873	154,486.47	
Act June 27, 1890:																
Army invalids.....	45,659	73	12	1	.....	.....	.....	1	1,745	.....	34	26	30,005	4,936	4,270,632.56	
Army minors, etc.....	4,322	404	3	12	.....	.....	.....	.....	16	.....	682	2	2	4,131	848,754.35	
Navy invalids.....	1,542	12	.....	.....	.....	.....	.....	.....	120	.....	.....	2	1,092	338	145,315.40	
Navy minors, etc.....	157	14	.....	.....	.....	.....	.....	.....	.....	22	.....	.....	.....	149	27,385.86	
Act Apr. 19, 1908:																
Army widows.....	223,872	13,830	7	2	1	1	.....	1	12,795	599	39	27	318	223,936	32,753,478.19	
Navy widows.....	9,075	488	.....	.....	.....	.....	.....	.....	583	17	2	2	25	8,928	1,326,818.57	

EXHIBIT 1.—Pensioners added to and dropped from the roll at the beginning and at the close of the year and the amount disbursed to each class of pensioners during the year ended June 30, 1913—Continued.

	Number of pensioners at beginning of year.	Gains to roll.			Gains to classes by transfer from other classes.					Losses to the roll by—					Losses to classes.	Number of pensioners at end of year.	Disbursements.
		Original.	Restoration.	Re-allowance.	Original.	Restoration.	Re-allowance.	Additional.	Re-issue.	Death.	Remarriage.	Limitation.	Failure to claim.	Other causes.			
<i>War with Spain.</i>																	
Army invalids.....	23,097	761	22	30	1					436			1	44	4	23,416	\$3,130,866.45
Army nurses.....	3															3	
Army widows, etc.....	4,734	179	1	1					1	216	44	60	2	5	3	4,686	780,066.43
Navy invalids.....	744	23	2	2						26				2	2	741	109,978.41
Navy widows, etc.....	275	8	1	1						11	2	1			1	269	50,257.13
<i>War of 1812.</i>																	
Widows.....	238									37			1	1		199	32,171.07
<i>War with Mexico.</i>																	
Survivors.....	1,313	14		27	18		38		17	270			1	1	13	1,142	411,416.35
Widows.....	5,533	114	1		1					521	2		1	2		5,123	773,283.55
<i>Indian wars.</i>																	
Survivors.....	1,210	9			1					154						1,066	176,292.72
Widows.....	2,439	76								183	1				1	2,330	351,371.38
Total.....	860,294	19,276	98	384	29	7	206		383,262	57,459	888	983	202	320	383,504	820,200	174,160,717.85
<i>Amount disbursed on account of regular establishment.</i>																	
<i>Amount disbursed on account of Civil War.</i>																	
Amount disbursed on account of War with Spain.....																	
Amount disbursed on account of War of 1812.....																	
Amount disbursed on account of War with Mexico.....																	
Amount disbursed on account of Indian wars.....																	
Amount disbursed by Treasury settlements.....																	
\$3,447,141.83 164,897,872.48 4,071,168.42 32,171.07 1,184,699.96 527,664.10 10,942.95																	

Amount disbursed on account of regular establishment.....

\$3,447,141.88

Amount disbursed on account of Civil War.....

164,897,872.48

Amount disbursed on account of War with Spain.....

4,071,168.42

Amount disbursed on account of War of 1812.....

4,32,171.07

Amount disbursed on account of War with Mexico.....

1,184,699.90

Amount disbursed on account of Indian wars.....

527,664.10

Amount disbursed by Treasury settlements.....

10,942.95

EXHIBIT 3.—Appropriations for pensions and disbursements on account thereof for the fiscal year ended June 30, 1913, and unexpended balances at close of year.

Items of appropriation.	Appropriations.			
	Act of Aug. 17, 1912.	Deficiency act of Mar. 4, 1913.	Repayments to the appropriation.	Total.
Army pensions.....	\$159,500,000.00	\$13,500,000.00	\$18,483.62	\$173,018,483.62
Navy pensions.....	5,000,000.00	1,500,000.00	1,392.83	6,501,392.83
Total pensions.....	164,500,000.00	15,000,000.00	19,876.45	179,519,876.45
Fees of examining surgeons, pensions.....	200,000.00	100,000.00		300,000.00
<i>Salaries and expenses</i>				
Salaries, pension agents.....	42,000.00			42,000.00
Salary, disbursing clerk of pensions.....	1,666.67			1,666.67
Clerk hire, pension agencies.....	375,000.00			375,000.00
Rent for pension agency at New York, N. Y.....	2,479.17			2,479.17
Contingent expenses, pension agencies.....	25,000.00		14.60	25,014.60
Total.....	446,145.84		14.60	446,160.44
Grand total.....	165,146,145.84	15,100,000.00	19,891.05	180,266,036.89

Items of appropriation.	Disbursements.				
	Amount disbursed by United States pension agents from July 1, 1912, to Jan. 31, 1913.	Amount disbursed by disbursing clerk, Bureau of Pensions, from Feb. 1, 1913, to June 30, 1913.	Amount disbursed by disbursing clerk, Department of the Interior, from Feb. 1, 1913, to June 30, 1913.	Amount disbursed by Treasury settlements from July 1, 1912, to June 30, 1913.	Total amount disbursed from July 1, 1912, to June 30, 1913.
Army pensions.....	\$90,575,922.30	\$77,563,527.08		\$10,526.58	\$168,149,975.96
Navy pensions.....	3,132,050.16	2,889,218.31		416.37	6,021,684.84
Total pensions.....	93,707,972.46	80,452,745.39		10,942.95	174,171,660.80
Fees of examining surgeons, pensions.....	58,283.60		\$45,882.63		104,166.23
<i>Salaries and expenses.</i>					
Salaries, pension agents.....	41,299.94				41,299.94
Salary, disbursing clerk of pensions.....			1,666.67		1,666.67
Clerk hire, pension agencies.....	212,026.85		124,282.74	11,366.54	347,676.13
Rent for pension agency at New York, N. Y.....	2,125.00				2,125.00
Contingent expenses, pension agencies.....	2,006.70			4,821.39	6,828.09
Total.....	257,458.49		125,949.41	16,187.93	399,595.83
Grand total.....	94,023,714.55	80,452,745.39	171,832.04	27,130.88	174,675,422.86

EXHIBIT 3.—Appropriations for pensions and disbursements on account thereof for the fiscal year ended June 30, 1913, and unexpended balances at close of year—Continued.

Items of appropriation.	Transfer appropriation warrant No. 18 act Aug. 23, 1912, stationery, Department of the Interior.	Balances.			
		Remaining in the hands of the disbursing clerk, Bureau of Pensions, June 30, 1913	Remaining in the hands of the disbursing clerk, Department of the Interior, June 30, 1913.	Remaining in the United States Treasury June 30, 1913.	Available balance June 30, 1913.
Army pensions.....		\$403, 148. 79		\$4, 465, 353. 87	\$4, 868, 507. 66
Navy pensions.....		55, 880. 41		423, 827. 58	479, 707. 99
Total pensions.....		459, 029. 20		4, 889, 186. 45	5, 348, 215. 65
Fees of examining surgeons, pensions.....			\$39, 117. 37	156, 716. 40	195, 833. 77
<i>Salaries and expenses.</i>					
Salaries, pension agents.....				700. 06	700. 06
Clerk hire, pension agencies.....			2, 717. 26	24, 606. 61	27, 323. 87
Rent for pension agency at New York, N. Y.....				354. 17	354. 17
Contingent expenses, pension agencies.....	\$18, 000. 00			186. 51	186. 51
Total.....	18, 000. 00		2, 717. 26	25, 847. 35	28, 564. 61
Grand total.....	18, 000. 00	459, 029. 20	41, 834. 63	5, 071, 750. 20	5, 572, 614. 03

In addition to the above there were disbursed during the fiscal year ended June 30, 1913, the following sums, chargeable to the appropriation for the fiscal year ended June 30, 1912:

Fees of examining surgeons, pensions, pension agent at Washington, D. C.....	\$42, 409. 17
Fees of examining surgeons, pensions, by Treasury settlements.....	883. 00
Total.....	43, 297. 17

Of the amount, \$6,021,684.84, disbursed for Navy pensions, \$400,066.05 was paid from the Navy pension fund, under the acts of Aug. 17, 1912, and Mar. 4, 1913.

* * * * *

EXHIBIT 5.—*Pensioners and amounts paid, arranged by States, Territories, insular possessions, Canal Zone, and foreign countries, during the fiscal year ended June 30, 1913.*

State or Territory.	Number.	Amount.	Country.	Number.	Amount.
Alabama.....	3,230	\$685,825.90	INSULAR POSSESSIONS.		
Alaska.....	80	16,986.40			
Arizona.....	895	190,035.35	Canal Zone.....	2	\$424.66
Arkansas.....	8,808	1,870,202.64	Guam.....	3	636.99
California.....	28,964	6,149,926.12	Hawaii.....	84	17,835.72
Colorado.....	8,049	1,709,044.17	Philippines.....	70	14,863.10
Connecticut.....	10,003	2,123,936.99	Porto Rico.....	44	8,342.52
Delaware.....	2,601	552,270.33	Total.....	203	43,102.99
District of Columbia.....	8,986	1,907,997.38			
Florida.....	5,085	1,079,688.05	FOREIGN COUNTRIES.		
Georgia.....	2,995	635,928.35			
Idaho.....	2,245	476,680.85	Argentina.....	13	\$2,760.29*
Illinois.....	56,482	11,992,823.06	Australia.....	101	21,445.33
Indiana.....	49,987	10,613,739.71	Austria-Hungary.....	37	7,856.21
Iowa.....	27,821	5,907,232.93	Belgium.....	23	4,883.59
Kansas.....	32,399	6,879,279.67	Canada.....	2,879	611,298.07
Kentucky.....	21,350	4,533,245.50	Chile.....	11	2,335.03
Louisiana.....	5,373	1,140,849.09	China.....	15	8,184.95
Maine.....	14,261	3,028,038.13	Cuba.....	61	12,952.13
Maryland.....	12,439	2,641,172.87	Denmark.....	56	11,890.48
Massachusetts.....	34,124	7,245,548.92	England.....	555	117,843.15
Michigan.....	34,298	7,282,494.34	France.....	76	16,137.08
Minnesota.....	12,703	2,697,227.99	Germany.....	520	110,411.60
Mississippi.....	4,009	851,230.97	Ireland.....	404	85,781.32
Missouri.....	39,490	8,284,911.70	Italy.....	58	12,315.14
Montana.....	2,364	501,948.12	Japan.....	33	7,006.89
Nebraska.....	14,364	3,049,908.12	Mexico.....	136	28,876.88
Nevada.....	399	84,719.67	New Zealand.....	14	2,972.62
New Hampshire.....	6,560	1,392,884.80	Norway.....	73	15,600.09
New Jersey.....	20,624	4,379,693.92	Peru.....	12	2,547.96
New Mexico.....	1,896	402,577.68	Russia.....	16	3,397.28
New York.....	68,270	14,498,319.71	Scotland.....	75	15,924.75
North Carolina.....	3,631	770,970.23	South Africa.....	10	2,123.30
North Dakota.....	2,931	622,339.23	Sweden.....	69	14,650.77
Ohio.....	77,599	16,479,146.29	Switzerland.....	66	14,013.78
Oklahoma.....	11,397	2,419,925.01	Wales.....	26	5,520.58
Oregon.....	7,798	1,655,749.34	Other foreign countries		
Pennsylvania.....	75,618	16,058,520.56	or possessions having		
Rhode Island.....	4,482	951,663.06	less than 10 pension-		
South Carolina.....	1,694	359,687.02	ers each and not		
South Dakota.....	5,392	1,144,883.36	classified.....	156	33,123.48
Tennessee.....	16,954	3,599,842.82	Total.....	5,495	1,166,753.35
Texas.....	8,402	1,783,996.66			
Utah.....	1,026	217,850.58			
Vermont.....	6,540	1,388,638.20			
Virginia.....	8,709	1,849,181.97			
Washington.....	9,942	2,110,984.86			
West Virginia.....	10,618	2,254,519.94			
Wisconsin.....	19,776	4,109,038.08			
Wyoming.....	839	178,144.87			
Total.....	814,502	172,950,861.51			

SUMMARY.

	Pensioners.	Payments.
Pensioner residing in States and Territories and payments to them.....	814,502	\$172,950,861.51
Pensioners residing in insular possessions and Canal Zone and payments to them.....	203	43,102.99
Pensioners residing in foreign countries and payments to them.....	5,495	1,166,753.35
Total.....	820,200	174,160,717.85
Payments by Treasury Department (Treasury settlements).....		10,942.95
Total payments on account of Army and Navy pensions, 1913.....		174,171,660.80

* * * * *

EXHIBIT 8.—Statement showing the number of pensioners in each class under the general pension laws and special acts of Congress, together with the annual value of each on the roll at the close of the fiscal year ended June 30, 1913.

Classes.	General laws.		Special acts.	
	Number.	Annual value.	Number.	Annual value.
Invalids, regular establishment.....	14,317	\$2,149,124.18	244	\$60,276.00
Widows, etc., regular establishment.....	3,975	687,912.00	422	168,068.00
Survivors, act May 11, 1912.....	379,064	95,000,843.48		
Survivors, act Feb. 6, 1907.....	16,241	2,762,340.00		
Invalids, general law.....	46,275	14,958,678.00	15,525	5,228,322.00
Nurses.....	253	36,432.00	72	11,988.00
Widows, etc., general law.....	58,116	8,807,006.00	4,403	959,068.00
Invalids, act June 27, 1890.....	5,274	718,329.00		
Minors, etc., act June 27, 1890.....	4,280	768,264.00		
Widows, act Apr. 19, 1908.....	232,864	33,659,278.00		
Invalids, War with Spain.....	23,593	2,877,346.16	564	115,650.00
Nurses.....			3	432.00
Widows, etc., War with Spain.....	4,612	710,196.00	243	59,640.00
Widows, War of 1812.....	187	26,928.00	12	3,216.00
Survivors, War with Mexico.....	1,104	387,876.00	38	10,404.00
Widows, War with Mexico.....	4,881	702,864.00	242	39,000.00
Survivors, Indian wars.....	885	212,400.00	181	32,952.00
Widows, Indian wars.....	2,263	325,872.00	67	10,080.00
Total.....	798,184	164,791,688.82	22,016	6,699,096.00

Total number of pensioners..... 820,200

Total annual value..... \$171,490,784.82

Average value of each pension:

All classes.....	209.08
Regular establishment.....	161.69
Act May 11, 1912.....	250.62
Act Feb. 6, 1908.....	170.08
General law, Civil War.....	240.69
Act June 27, 1890.....	155.59
Act Apr. 19, 1908.....	144.54
War with Spain.....	144.57
Survivors, Civil War.....	256.64

REPORT OF THE COMMISSIONER OF PATENTS.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., August 14, 1913.

SIR: I have the honor to submit herewith the following report of the business of the United States Patent Office for the fiscal year ended June 30, 1913:

WORK OF THE YEAR.

Applications received during fiscal year ended June 30, 1913.

Applications for patents for inventions.....	67,986
Applications for patents for designs.....	1,930
Applications for reissues of patents.....	172
Applications for registrations of trade-marks.....	7,053
Applications for registration of labels.....	926
Applications for registration of prints.....	344
Total applications.....	78,411
Disclaimers.....	22
Appeals on the merits.....	1,651
Total applications, disclaimers, and appeals.....	80,084

Applications for patents for inventions.

Year ended June 30—		Year ended June 30—	
1904.....	50,321	1909.....	62,800
1905.....	52,323	1910.....	63,365
1906.....	55,619	1911.....	65,154
1907.....	56,514	1912.....	69,236
1908.....	58,527	1913.....	67,986

Applications for patents, including reissues, designs, trade-marks, labels, and prints.

Year ended June 30—		Year ended June 30—	
1904.....	55,468	1909.....	73,026
1905.....	66,228	1910.....	72,533
1906.....	68,881	1911.....	74,677
1907.....	66,795	1912.....	79,747
1908.....	68,441	1913.....	78,411

Applications awaiting action.

Applications awaiting action on the part of the office on June 30—	
1909.....	17,153
1910.....	14,575
1911.....	17,809
1912.....	21,059
1913.....	27,328

Patents withheld and patents expired.

Letters patent withheld for nonpayment of final fees.....	7,856
Applications allowed awaiting payment of final fees.....	14,612
Patents expired, fiscal year 1912-13.....	21,427

Patents granted and trade-marks, labels, and prints registered.

Class.	1909	1910	1911	1912	1913
Letters patent.....	34,332	36,387	33,513	34,220	35,025
Design patents.....	721	629	777	1,148	1,579
Reissue patents.....	162	142	138	171	150
Trade-marks.....	4,547	4,342	3,791	4,635	5,166
Labels.....	779	176	576	625	664
Prints.....	239	59	181	268	254
Total.....	40,780	41,635	38,976	41,067	42,838

Receipts from all sources.

Applications, first fees.....	\$1,018,485.00
Designs.....	35,721.00
Reissues.....	5,085.00
Trade-marks.....	70,132.00
Final fees.....	693,290.11
Appeals.....	19,010.00
Disclaimers.....	220.00
Coupons ¹	49,806.40
Drawings.....	5,898.35
Recording assignments.....	31,996.07
Labels.....	4,906.00
Court costs.....	75.25
Copies of records.....	128,281.17
Prints.....	1,842.00
Unapplied.....	318.38
Official Gazette and other publications.....	17,423.50
Total receipts.....	2,082,490.23

Expenditures.

	Expended	Estimated liabilities.	Total.
Salaries.....	\$1,301,229.09		\$1,301,229.09
Scientific library.....	1,206.49	\$771.17	1,977.66
Postage on foreign matter.....	1,295.85		1,295.85
Stationery.....	9,707.13		9,707.13
Ice.....	310.51		310.51
Washing towels.....	164.89		164.89
Telephones.....	844.11		844.11
Furniture and sundries.....	18,928.73		18,928.73
Law library.....	\$22.35		422.35
Public use.....	406.69		406.69
Photolithographing, paid contractor.....	95,844.61		95,844.61
Photographic printing, paid contractor.....	7,117.97		7,117.97
Printing old specifications, paid Public Printer.....	37,037.42		37,037.42
Printing and binding:			
Official Gazette and indexes.....	134,471.98		134,471.98
Specifications.....	301,204.08		284,590.48
Miscellaneous.....	29,359.95		29,359.95
International Convention for Protection of Industrial Property.....		750.00	750.00
Total.....	1,939,551.85	1,521.17	1,924,459.42

¹ During the year 2,458,427 printed copies of patents to the value of \$112,901.45 were furnished on coupon and cash orders, and 856,002 copies were sent to foreign patent offices in exchange.

Receipts and expenditures.

Receipts from all sources.....	\$2,082,490.23
Expenditures.....	1,924,459.42
Net surplus.....	158,030.81
Total net surplus to date.....	7,290,103.57

Comparative statement.

June 30—	Receipts.	Expenditures.	June 30—	Receipts.	Expenditures.
1903.....	\$1,591,251.04	\$1,423,094.40	1909.....	\$1,975,919.97	\$1,887,443.35
1904.....	1,663,879.99	1,469,124.40	1910.....	2,022,043.26	1,953,549.76
1905.....	1,737,334.44	1,472,467.51	1911.....	1,987,778.58	1,957,001.85
1906.....	1,811,297.84	1,538,149.40	1912.....	2,094,059.50	2,019,236.01
1907.....	1,859,592.89	1,584,489.70	1913.....	2,082,490.23	1,924,459.42
1908.....	1,874,180.75	1,608,292.01			

Briefly summarized, the foregoing tables show that there were received in the last fiscal year 67,986 applications for mechanical patents, 1,930 applications for design patents, 172 applications for reissues, 7,053 applications for trade-marks, 926 applications for labels, and 344 applications for prints.

There were 38,754 patents granted, including reissues and designs, and 5,166 trade-marks, 664 labels, and 254 prints were registered.

The number of patents that expired was 21,427. The number of allowed applications which were by operation of law forfeited for nonpayment of the final fees was 6,970. The total receipts of the office were \$2,082,490.23. The total expenditures amounted to \$1,924,459.42, and the net surplus over expenditures was \$158,030.81, making the grand total of net surplus of receipts over all expenditures \$7,290,103.57.

It will be noted that there was a slight decrease in the volume of business during the last fiscal year, the total number of applications for patents for inventions, for designs, for reissue of patents, registration of trade-marks, registration of labels, and registration of prints, disclaimers to patents, and appeals on the merits, is 80,084. The total of all applications for the fiscal year immediately previous was 81,459 for the same period, which shows a decrease of 1,375 applications received.

The number of cases appealed and heard and disposed of by the three appellate tribunals of the office and the Court of Appeals of the District of Columbia in patent cases is shown in the following table:

<i>Appellate work.</i>	
Number of interferences declared.....	1,469
Number of interferences disposed of before final hearing.....	1,400
Number of interferences heard.....	267
Number of interferences disposed of.....	286
Number of interferences awaiting decision.....	33
Oldest case awaiting action, Mar. 7, 1913.	
Appeals to examiners in chief in interference cases.....	190
Ex parte appeals to examiners in chief.....	915
Total.....	1,105
Number of appeals in interference cases disposed of.....	172
Number of ex parte appeals disposed of.....	903
Total.....	1,075
Interference cases awaiting action.....	116
Ex parte cases awaiting action.....	461
	577
Oldest interference case awaiting action, Jan. 31, 1913.	
Oldest ex parte case awaiting action, Feb. 5, 1913.	
Appeals to commissioner in interference cases.....	124
Appeals to commissioner in opposition cases.....	31
Appeals to commissioner in cancellations.....	5
Ex parte appeals to commissioner.....	136
Interlocutory appeals to commissioner.....	210
Ex parte appeals in trade-mark cases.....	70
	576
Petitions to commissioner.....	2,691
Total.....	3,267
Number of cases disposed of by commissioner:	
Appeals in interference cases.....	99
Appeals in opposition cases.....	20
Appeals in cancellation cases.....	5
Ex parte appeals.....	153
Interlocutory appeals.....	203
Ex parte appeals in trade-mark cases.....	69
	549
Petitions to commissioner.....	2,677
Total.....	3,226
Appeals to Court of Appeals, District of Columbia:	
Ex parte cases.....	21
Interference cases.....	41
Opposition cases.....	11
Cancellation cases.....	2
Total.....	75

* * * * *

Respectfully submitted.

EDWARD B. MOORE,
Commissioner of Patents.

The SECRETARY OF THE INTERIOR.

STATEMENT OF THE COMMISSIONER OF EDUCATION.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, September 1, 1913.

SIR: I have the honor to submit the following brief statement of the operations of this office for the fiscal year ended June 30, 1913:

DIVISION OF HIGHER EDUCATION.

The work of the division of higher education included the supervision of the administration and finances of the land-grant colleges, so far as these relate to the Federal funds; statistical work; the preparation of three bulletins; and the field work of the two specialists assigned to the division.

The reports required to be made by institutions receiving Federal aid under the acts of Congress of August 30, 1890, and March 4, 1907, were duly received and examined. Expenditures were found to have been made for the purposes specified in the acts. A special study of the extension work of the land-grant colleges was undertaken.

Fifty-two institutions were visited. Several inspections were made at the request of the institutions, and detailed reports of the investigations were made to the institutions. A representative from this division was in attendance at 21 educational meetings*and conferences.

The statistics and other data relating to colleges, universities, technological schools, professional schools, and normal schools were compiled for the annual report of the commissioner. Hereafter this work will be done by the statistical division.

Dr. Kendric C. Babcock, specialist in higher education, who devoted a large part of his time to a study of the standards of universities and colleges and the organization and administration of higher education in the several States, resigned his position in the bureau in May, 1913, to accept the deanship of the College of Literature, Arts, and Science of the University of Illinois. Upon his resignation, Dr. George E. MacLean, formerly president of the University of Iowa, was given a temporary appointment as specialist in higher education and detailed to visit the British universities and report on recent developments therein. Dr. MacLean has submitted a preliminary report. His final report will be submitted for publication as a bulletin of the bureau.

DIVISION OF SCHOOL ADMINISTRATION.

The division of school administration collected and compiled the statistics of city school systems for the annual report, and prepared a chapter on the most important features of city-school administration during the year. It issued nine circulars on various phases of school administration. It sent out periodical multigraph letters to city-school officials, informing them of important legislation and rulings of city boards of education. During the winter and spring of this year the legislatures of about three-fourths of the States were in session. While these legislatures were in session circulars were prepared, and sent from time to time to the school officials of all the States, giving the titles of bills pertaining to education either intro-

duced or passed in any of these legislatures. Summaries were prepared of the most important of these bills.

A member of this division spent three months studying the schools of certain Cantons and cities of Switzerland for the special purpose of reporting on the methods by which the work of these schools is adapted to the needs of the people, interpreting these methods in terms of American methods, and showing how they may be adapted to the conditions and needs of American schools. The report of this investigation will be published as a bulletin of the bureau.

Members of the division visited and studied the schools of 21 cities in the United States. Many cities have adopted the system of uniform records and reports recommended by the bureau, and it is now possible to make more accurate and helpful comparisons of the income, expenditures, and educational activities of these cities than could be made before this uniform system was adopted.

DIVISION OF SCHOOL HYGIENE AND SANITATION.

As a means for the improvement of rural schoolhouses the bureau prepared, for lending purposes, six cardboard models of each of three different types of schoolhouses. The demand for the loan of these models received from school officials, lumbermen, associations, health boards, normal schools, and others has been overwhelming, and it has been possible thus far to comply with only a very limited number of the requests. This experiment has been so successful that the bureau must undoubtedly extend this service as soon as funds therefor can be made available. In addition to this service, special advice regarding the construction of schoolhouses has been given to school officials in the States of Alabama, California, Florida, Georgia, Indiana, Kentucky, Michigan, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, and Virginia.

Bulletins on medical inspection and on the International Congress on Hygiene and Demography and a report on the work of typical health-teaching agencies in the United States were issued during the year. Considerable work has been done also on the manuscript for a bulletin on rural schoolhouses. The special agent attached to this division rendered valuable service to the International Congress on Hygiene and Demography held in Washington City in the fall of 1912. He had charge of the educational exhibit held in connection with the Congress. He also rendered much assistance in the preparation of an exhibit for the International Congress on School Hygiene at Buffalo, N. Y.

DIVISION OF RURAL EDUCATION.

An increase of the appropriation "for the investigation of rural education, industrial education, and school hygiene" from \$6,000 to \$15,000 rendered possible the more complete organization of the division of rural education by the appointment of a chief of field service in rural education at a salary of \$4,000 per annum and three specialists in rural education at a salary of \$2,500 each per annum. These persons were assigned to duty as follows: The chief of field service was placed in charge of the work in the Southern States, with

headquarters at Richmond, Va.; one specialist, with headquarters at Salem, Oreg., was placed in charge of the work in the Western States; one, with headquarters at Kirksville, Mo., has charge of the work in the Middle Western States; and the third has charge of the work in the Eastern and Northern States. These persons have made special studies of the condition of rural education in their several districts and have collected a large amount of information, some of which has already been published; the rest is being digested and prepared for publication. This material will form a valuable addition to the literature of rural education and will contribute much toward the improvement of educational conditions in rural communities throughout the United States.

In the South the division has cooperated with the Southern Education Board and the Conference for Education in the South, with the supervisors of rural education, and the directors of rural school improvement in the several Southern States, and has made a special study of the means by which the school terms are being extended, better preparation given teachers, and the standards of the schools improved. A special study of educational progress in the South since 1870, dealing largely with rural education, has been begun, as has also a study of the development of high schools and secondary education in the South since 1900. In the West an intensive study of the rural schools was made in one county in the State of Oregon, and a special study was also made of the Oregon plan of school credit for home work, as was also of the plan adopted in Walla Walla County, Wash., for organizing the elementary schools of the district around a central school doing some high-school work. An intensive study of education in Montgomery County, Md., has been made and the results have been published in a bulletin of the bureau. A careful study of the preparation of teachers for rural schools in all parts of the country has been begun. A special study was made of the rural schools of the southern Appalachian Mountain counties of the Virginias, the Carolinas, Georgia, Alabama, Tennessee, and Kentucky. Material has been collected for a digest of the most important and significant efforts for the extension and improvement of the work of rural schools in all parts of the United States within the year, and a beginning has been made on the collection of data for accurate detailed information in regard to each of the rural and village schools in the United States.

One specialist and two collaborators were detailed to make a careful study of the rural schools of Denmark for the purpose of finding and reporting the means by which they have become such a vital element in the rural life of that country. Three months were spent in going to Denmark and making personal inspection of typical rural schools. The results of these studies will be published in a series of four or five bulletins and will form a valuable contribution to the literature of rural education.

The members of this division prepared and assisted in the preparation of a number of bulletins on rural education which were issued during the year and attended numerous meetings for the purpose of disseminating information regarding educational conditions and suggesting methods by which such conditions might be improved. The titles of the bulletins referred to are included in the statement of the work of the editorial division.

Considerable additional material regarding various phases of rural education has been collected and will be issued in the form of bulletins during the present fiscal year.

The chief of field service severed his connection with the bureau on June 30, having been called to the presidency of the Virginia Polytechnic Institute at a salary much larger than that paid him by the bureau.

DIVISION OF NEGRO EDUCATION.

The division of negro education was established during the year with the cooperation of the trustees of the Phelps-Stokes fund. Besides a general preliminary study of schools for negroes in the South, it has made a first-hand study of the high, private, and industrial schools for colored people in Alabama, has collected a great deal of information regarding those schools, and is preparing a preliminary report thereon. It has been able to render much assistance to persons making inquiries regarding the reliability of schools for negroes.

The division prepared a report on "Recent movements in negro education" and on "Social science and history in high schools."

DIVISION OF KINDERGARTEN EDUCATION.

With the cooperation of the National Kindergarten Association there was established on March 3, 1913, the division of kindergarten education. A survey has been made of the status of kindergartens in public schools and of all other kinds of kindergartens in the United States. The results of this survey will be incorporated in a bulletin and will include detailed statistics as well as opinions of superintendents, supervisors, teachers, and others as to the value of kindergarten training.

In cooperation with the bureau a committee of 20 kindergarten training teachers has been created to assist in making a survey of kindergarten training schools with the purpose of formulating standards for such schools. The committee has appointed two subcommittees, one of which will give advice and suggestions wherever problems of administration and practice arise, and the other will select and recommend material suitable for publication in the form of leaflets and bulletins.

* * * * *

The volume of work performed by the editorial division constantly increases. In addition to the two volumes of the annual report, the annual statement of the commissioner, 44 numbers of the bulletin, 3 numbers of the library circular, and 1 miscellaneous publication issued during the year, a large amount of information regarding important movements in education was disseminated by means of the public press and was thus brought to the attention of a much larger number of people than it is possible to reach by means of the limited editions of the bureau's publications. This service has proved very helpful to the educational interests of the country.

In cooperation with a committee of the National Education Association, the bureau is prosecuting an inquiry into the subject of teachers' salaries. The work on the part of the bureau has been assigned to the editorial division. It is expected that a comprehensive investigation will be made and that the results will be published within the coming year.

STATISTICAL DIVISION.

The statistical division has sent out 81,032 statistical schedules and other requests for information, as compared with 60,618 the preceding year. These requests went to State and city school systems, public and private high schools, universities and colleges, professional schools, normal and summer schools, manual and technical training schools, business colleges, negro schools, reformatories, schools for the defective classes, and 18,652 libraries.

The second volume of the annual report for 1912 is entirely statistical, summarizing reports from—

- 48 State school systems.
- 834 city school systems.
- 596 universities and colleges.
- 564 professional schools.
- 1,057 training schools for nurses.
- 277 normal schools.
- 569 summer schools.
- 11,224 public high schools.
- 2,044 private high schools and academies.
- 375 manual and technical training schools.
- 519 commercial and business schools.
- 417 schools for negroes.
- 117 State industrial schools and reformatories.
- 60 institutions for the blind.
- 141 institutions for the deaf.
- 53 institutions for the feeble-minded.

Of the 18,895 returns from the above sources, 15,567 were tabulated and summarized by the statistical division and the remaining 3,328 in two other divisions whose statistical work has since been transferred to this division.

In addition to the work indicated above, the division read the proof of a large part of the statistical volume of the annual report for 1912, prepared a card list of over 9,000 libraries, made a collection of catalogues and courses of study of public and private high schools, compiled many tables on illiteracy, examined reports of State school systems, collected lists of elementary private and church schools in nearly all the States. The division has recently tabulated the returns from an exhaustive inquiry relating to the study of home economics in all classes of schools and institutions, and is now tabulating statistics of drawing in public and private high schools and in the elementary schools of city systems.

June 23, 1913, the statistical work of the divisions of higher education and school administration was transferred to this division. Four clerks were transferred at the same time. The statistician and 10 clerks now comprise the statistical division. This force should be increased at least 50 per cent to insure the prompt handling of the great mass of material now on hand and in process of collection. The tabulation of much valuable material already collected has been deferred and urgent investigations have been postponed, because the division is not strong enough to handle the returns.

* * * * *

THE ALASKA SCHOOL SERVICE.

During the year the field force of the Alaska school service consisted of 5 superintendents, 106 teachers, 9 physicians, 9 nurses, and 3 hospital attendants. Seventy-six schools were maintained with an

enrollment of about 4,000; complete reports have not yet been received from the more distant schools.

Among the most urgent needs of the natives of Alaska is protection against the diseases which prevail among them to an alarming extent. Accordingly, without neglecting the work in the school rooms and the social work in the native villages, special attention was given during the year to the medical and sanitary work.

There is no specific appropriation for the support of medical work among the natives of Alaska. For several years the bureau has been striving, without success, to secure funds for the establishment of well-equipped hospitals and for the employment of a sufficient number of physicians and nurses. Under the terms of the appropriation "Education of natives of Alaska" the bureau can employ physicians and nurses for work among the Alaska natives, but it can not erect the hospitals which are greatly needed.

Of the appropriation "Education of natives of Alaska" for the fiscal year ending June 30, 1913, \$32,000 was expended (1) in maintaining hospitals in rented buildings at Juneau and Nushagak; (2) in maintaining improvised hospitals in school buildings at Nulato and Kotzebue; (3) in payments under contracts with the Holy Cross Hospital at Nome, with the Fairhaven Hospital at Candle, and with the Cordova Hospital, for the treatment of diseased natives upon the application of a superintendent, physician, or teacher in the Alaska school service; (4) in the employment of physicians and nurses in the hospitals and in field work in their respective districts; and (5) in furnishing medicines and medical books to the teachers for use in relieving minor ailments.

During the year epidemics of infantile paralysis at St. Michael and of diphtheria at Nulato were checked by physicians employed by the bureau.

Passed Asst. Surg. Emil Krulish, of the Public Health Service, spent from April to November, 1912, investigating health conditions in the native settlements in southeastern Alaska, in western Alaska as far as Cooks Inlet, on the Yukon River, and in the vicinity of Nome. In his report, Dr. Krulish states that, in his opinion, 15 per cent of the native population of Alaska is infected with tuberculosis in its varying forms, both active and latent, while in 7 per cent it is present in its active stages. Trachoma, rheumatism, and venereal diseases also prevail to a considerable extent in many of the native villages. Dr. Krulish urges an appropriation of at least \$125,000 to establish an Alaska medical service among the natives of Alaska with an efficient organization. The good results already accomplished by the present inadequate medical service demonstrate that disease among the natives of Alaska can be eradicated if funds are provided for the establishment of well-equipped hospitals in important centers, and for the employment of a sufficient number of physicians and nurses.

Among the most urgent needs of the work among the natives of Alaska have been (1) legislation compelling regular attendance in the schools, (2) legislation giving the employees of the Bureau of Education in Alaska power legally to enforce in the native villages obedience to their instructions with reference to matters relating to health, and (3) legislation regulating the civic rights of the natives.

It is gratifying that at its first session the Alaska Territorial Legislature took action regarding two of these matters. The compulsory school-attendance law makes attendance obligatory upon all native children between the ages of 8 and 16 (unless physically or mentally incapacitated) residing within 1 mile of a United States public school. The greatest care will be taken to enforce this law in such a manner that it will not work a hardship on the natives. It will be used as a stimulus in securing the attendance of such native children as are inexcusably absent from school. Due consideration will be given to the fact that native children should acquire and retain skill in hunting and fishing. However, the vigorous enforcement of this law in flagrant cases of inexcusable nonattendance will doubtless have a very salutary effect. The law regulating the registration and restriction of communicable diseases in Alaska provides that in any native village any representative of the Bureau of Education shall have power as health officer to enforce quarantine regulations; to cause garbage to be removed; to disinfect persons, houses, or property; and to cause furniture or household goods to be destroyed when they are a menace to the public health. Violations of the regulations made or disobedience of orders given under the authority of this law are punishable by a fine not exceeding \$100 or by imprisonment for not more than 50 days, or by both fine and imprisonment. The Alaska Territorial Legislature also passed a bill to amend the Penal Code of Alaska, making the soliciting, purchasing, or receiving of liquor by a native a criminal offense.

The prosperity of the Hydaburg colony upon the tract on Prince of Wales Island, reserved for its use by Executive order, where the natives successfully conduct their own store and sawmill, caused the natives of Klukwan and Klawock, in southeastern Alaska, to desire similar reservation upon which to conduct their own enterprises. By Executive order a tract with an approximate area of 800 acres, bordering the Chilkat River, has been reserved for the exclusive use of the Klukwan natives. Much of this land has agricultural value, and gardening will be systematically taught by the teacher of the United States public school. The proposed reservation at Klawock is within the Tongass National Forest; arrangements are being made with the Forest Service for its reservation.

Expenditures from appropriation "Education of natives of Alaska, 1913."

Appropriation	\$200,000.00
Salaries in Alaska	94,722.65
Equipment and supplies	13,889.54
Fuel and light	19,555.27
Local expenses	2,274.76
Repairs and rent	3,685.91
Buildings	5,843.04
Medical relief	31,431.05
Destitution	1,792.05
Commissioner's office salaries	5,927.22
Seattle office salaries	7,037.50
Commissioner's office expenses	235.00
Seattle office expenses	500.00
Traveling expenses	12,616.36
Contingencies	489.65
Total	200,000.00

THE ALASKA REINDEER SERVICE.

Reports from the reindeer stations covering the fiscal year 1913 have not yet been received, the herds being in northern and western Alaska. The latest complete statistics regarding the reindeer service are those of the fiscal year 1912, according to which the total number of reindeer in Alaska, June 30, 1912, was 38,476, distributed among 54 herds. Of the 38,476 reindeer, 24,068, or 62.5 per cent, were owned by 633 natives; 3,776, or 9.8 per cent, were owned by the United States; 4,511, or 11.7 per cent, were owned by missions; and 6,121, or 16 per cent, were owned by Lapps. The total income of the natives from the reindeer industry during the fiscal year 1911-12, exclusive of the value of the meat and hides used by the natives themselves, was \$44,885.04.

The object of the importation of reindeer from Siberia into Alaska, which began in 1892, was originally to furnish a source of supply for food and clothing to the Eskimos along the shores of the Bering Sea and the Arctic Ocean. In 20 years the reindeer industry has elevated the Eskimos in northern and western Alaska from nomadic hunters and fishermen, eking out a precarious existence upon the rapidly disappearing game animals and fish, to civilized, thrifty men, having in their herds of reindeer assured support for themselves and opportunity to acquire wealth by the sale of meat and skins to the white men in those regions, and the shipment of meat and skins to the States.

In order to make the natives preserve and accumulate the reindeer intrusted to them and to preclude the possibility of the reindeer industry being taken from the natives, no native has been permitted to sell or otherwise dispose of female reindeer to any person other than a native of Alaska. Strict adherence to this fundamental principle has built up for the natives of northern and western Alaska this industry, which is especially adapted to them and which affords them assured means of support. There is grave danger that granting to the natives permission to dispose of female reindeer to white men would rapidly deprive the natives of their reindeer and destroy this great native industry which is the result of 20 years of careful oversight and fostering care.

Under a recent Executive order the Aleutian Islands have been set aside as the Aleutian Islands Reservation under the charge of the Department of Agriculture and of the Department of Commerce for the purpose of making experiments in raising fur-bearing animals, in developing the fisheries, and in propagating reindeer. In compliance with the request of the Department of Agriculture plans have been made to deliver to that department 50 reindeer from the herds of the Department of the Interior for use in stocking Umnak and Attu Islands, upon which the Bureau of Education has no representatives. In August, 1911, 40 reindeer were delivered to the Department of Commerce for use in stocking St. Paul and St. George Islands; in June, 1912, the number of reindeer on those islands had increased to 65.

Expenditures from appropriation "Reindeer for Alaska, 1913."

Appropriation -----	\$5,000.00
Salaries of chief herders -----	496.10
Supplies -----	4,203.90
Establishing new herds -----	300.00
Total -----	5,000.00

* * * * * *

RECOMMENDATIONS.

These estimates provide—

- (1) For necessary increases in salaries.
- (2) For an assistant commissioner, who should also be a specialist in secondary education, and should serve as the chief of a high-school division of the bureau.
- (3) For additional specialists and clerks in higher education, including universities, colleges, schools of technology, schools of professional education, and normal schools, with particular emphasis on the need of a specialist to devote his entire time and attention to the colleges of agriculture and mechanic arts for negroes in the Southern States.
- (4) For a considerable increase in the appropriation for the investigation of rural education, industrial education, and school hygiene, the present appropriation of \$15,000 being wholly inadequate for this purpose.
- (5) For the investigation of city school administration and education in city schools, which work the bureau is at present able to do only in the most meager and unsatisfactory way.
- (6) For the investigation of the education of exceptional children, for which there is an urgent demand, but for which the bureau now has no appropriation.
- (7) For the investigation of the education of adult illiterates and the dissemination of information as to the best methods of reducing the large amount of illiteracy of adult population in all parts of the country.
- (8) For the investigation of school and home gardening in cities and manufacturing towns, and for dissemination of information as to how this important form of industrial education may be promoted by the cooperation of the school and the home.
- (9) For the investigation of home education and the dissemination of information as to the best methods of the early physical, mental, and moral education of children in the home and the cooperation of the home and school for the education of children of school age.
- (10) For a specialist in educational theory and practice, to serve as a director of investigations in education, assisting National, State, and local committees and commissions and making available for them the large collection of material in the library of the bureau.
- (11) For a librarian and an assistant editor, the first of which is needed for the better care and use of the bureau's large collection of books, pamphlets, and reports on education, and the second because of the large increase of work in the editorial department.

(12) For two additional translators, and for a specialist and two assistants in foreign and domestic systems of education, all of which are needed to enable the bureau to keep the people of this country informed in regard to the significant progress in education in other countries.

(13) For two additional collectors and compilers of statistics, to enable the bureau to obtain prompt and accurate information for its statistical reports.

(14) For necessary additional clerks, copyists, laborers, and messengers.

(15) For an increase in appropriation for traveling expenses for the commissioner and employees acting under his direction, which is necessary to enable them to make first-hand investigations of educational conditions in different parts of the country and to disseminate information by meeting with educational associations and other societies interested in education in different parts of the country.

(16) For cooperative investigation and experiment in secondary and elementary education to enable the bureau to carry on, with the help of expert educators, important investigations and definite experiments in education under scientific control.

(17) For an increase of \$400 in the appropriation for collecting statistics, etc., for which the present appropriation is inadequate.

(18) For an increase of \$48,000 in the appropriation for education in Alaska to enable the bureau to provide education for all of the Eskimos, Aleuts, Indians, and other natives in this territory for not more than two-thirds of whom it has yet been able to make adequate provision.

(19) For the appropriation of \$125,000 to enable the Secretary of the Interior, in his discretion and under his direction, and with the advice and cooperation of the Public Health Service, to provide for the medical and sanitary relief of the Eskimos, Aleuts, Indians, and other natives of Alaska for which there is an imperative demand and which is necessary not only to the life and health of the natives, but for the welfare of the white settlers as well.

(20) That the various lump-sum appropriations be made available for personal services in the District of Columbia and elsewhere, without which the best results can not be had from the expenditure of these funds.

I recommend that the necessity of the increase in appropriations as estimated be urged upon Congress.

Respectfully submitted.

P. P. CLAXTON, *Commissioner*.

THE SECRETARY OF THE INTERIOR.

REPORT OF THE DIRECTOR OF THE UNITED STATES
GEOLOGICAL SURVEY.GEORGE OTIS SMITH, *Director*.

The appropriations for the work of the United States Geological Survey for the fiscal year 1912-13 comprised items amounting to \$1,497,920. The plan of operations was approved by the Secretary of the Interior, and a detailed statement of the work of the several branches and divisions of the Survey is presented on later pages of this report.

SPECIAL FEATURES.

SCOPE OF WORK.

The detailed statement which forms the greater part of this administrative report indicates the nature and extent of the public work performed by the Geological Survey. While in response to public opinion as expressed by Congress, both at the time of the Survey's creation and in recent years, and to the necessities of public-land administration, the greater emphasis has been properly placed upon the work relating to the public domain, yet the activities of this bureau cover the whole country. In the matter of geologic investigation field work was done last year in 45 States and in Alaska, while general studies were continued that have no definite geographic limitations. Topographic mapping was continued in 26 States, the District of Columbia, Alaska, and Hawaii, and the investigation of water resources included the gaging of streams in 42 States, Alaska, and Hawaii, work on underground waters in 19 States, and engineering studies of water utilization on the public lands. Add to this the statistical inquiries covering every mineral product and addressed to about 62,000 producers, with the accompanying study of the nature and extent of the mineral resources upon which the mineral industry depends, and it will be seen that the Geological Survey is in close touch with the physical development of the whole country.

Another measure of the activities of the Geological Survey as a field service may be afforded by the statement that during the year 378 field men of the regular staff, geologists and topographic and hydraulic engineers, were engaged in field examinations and investigation for longer or shorter periods. This figure does not include an even larger number of temporary assistants.

It follows that the Geological Survey is essentially a field service, and its policy and procedure in the public work intrusted to it are based on recognition and appreciation of field conditions. Practically every officer having large administrative responsibilities connected with its field operations has been connected with the service for at least a score of years and has worked in every grade of field position. This constitutes perhaps the largest factor in the determination of the policy and standards controlling the work of the Geological Survey.

GROWTH OF WORK.

During the last six years the field investigations of the Survey and the office work connected therewith have shown remarkable growth. Notwithstanding the fact that within that period the former technologic branch of the Survey has become an independent organization, the Bureau of Mines, the older bureau is larger now than it was six years ago.

In personnel the net growth since 1907 has been about 37 per cent; in general correspondence the number of incoming letters now exceeds that of 1907 by 43 per cent; the total distribution of reports and maps has increased 23 per cent, the increase in maps sold being even larger, 25 per cent; and the total cash receipts from sales of publications are larger by 60 per cent than in 1907. In the matter of total printed pages in the published reports there has also been a notable increase, though it is impossible to state this exactly by reason of changes in measure of page and size of type.

During this period, however, notwithstanding these gains in every particular that can be stated statistically, there has been a net loss in annual appropriations. The \$350,000 appropriated in items under the technologic branch in 1907 has been only in part replaced by increased amounts now appropriated in other items, although the net loss is also in part offset by increased cooperation by the States in the field work of this Federal service. Thus the fact becomes apparent that in spite of a large measure of growth in public demands, as proved by the increase in correspondence and in distribution of publications, especially in publications sold, there has been no increase in the total appropriations available for sustaining the work of this bureau.

If the most recently organized branch of the Survey, the land-classification board, is taken, even more noteworthy items of growth can be cited for a single year. With the board's work largely increased in every line of activity, the formal land-classification reports prepared for a single bureau, the Office of Indian Affairs, show for 1912-13 an increase in number of 20 per cent over the previous year. The letters received in the land-classification board increased 32 per cent, and the outgoing letters 70 per cent. It is not surprising that the files of this branch doubled in volume this last year.

The fact that more public work is being performed without corresponding increase in expenditure is unmistakable evidence of efficiency and economy. Efficiency in the public service is the end sought by an increasing number of administrative officers throughout the departmental service. The constant and painstaking effort of responsible chiefs and clerks in all grades is to make the largest returns to the public for the money appropriated by Congress. The motive of public service is often as effective in these kinds of Government work as the incentive of personal gain in private enterprise.

Because of this increasing pressure of official work, overtime service has become almost habitual in many of the divisions of the Survey. Of the scientific members of the organization, several will be found working at their desks every evening during the winter, often until midnight, so that many of the geologists and others average at least 10 per cent overtime. In the clerical force, where

there is the same devotion to duty but possibly not the same personal interest in the work, the record is no less creditable in the amount of voluntary and, indeed, volunteered service. In one group of clerks, for instance, the overtime throughout the year averages about 5 per cent; in another group the average is 7 per cent, the extra time reaching 9 per cent in one of the winter months. In another section an extra hour a day is required of the whole force during periods of a week or more when the demands from the public are especially heavy, the time of service showing, for instance, an increase of 20 per cent in a single month. The library is regularly kept open an extra hour during the winter to facilitate its use in connection with the official scientific work.

Another gratifying evidence of devotion to work is furnished in the records of attendance. Usually an average of only two-thirds or less of the total annual leave permissible under the law is taken by Survey members, while 10 to 14 per cent is the average sick-leave record (12½ per cent this last year). In the field work of the Geological Survey the men know no official hours; they regulate the length of the working day only by the season, and even after darkness has fallen there may be several hours of accounting and clerical work in the tent before the chief of party or his principal assistants turn in for the night.

In connection, however, with this matter of overtime work and what may be considered a maximum output, it is believed that the limit has been reached and that a crisis now faces the work in charge of this bureau. The activities imposed by Congress upon the Geological Survey have been increasing faster than the appropriations provided therefor, until now it is all too apparent that the organization is undermanned and underequipped. Overtime work under adverse conditions is, as already stated, evidence of enthusiastic loyalty to the public service, but the strain is cumulative and the organization is bound soon to weaken, while both the quality and the quantity of the product must plainly suffer unless more adequate appropriations are voted by Congress. The demand upon the Survey for more work can not be checked, but the means to meet the demand can be provided.

* * * * *

ALASKA RAILROAD COMMISSION.

A special contribution was made by the Survey to the work of the Alaska Railroad Commission, which was created by the Sixty-second Congress and charged with the investigation of transportation routes in Alaska. The commission consisted of five members, and the Survey geologist in charge of the investigation of mineral resources in Alaska was named in the statute as one of these members. Alfred H. Brooks was therefore designated by President Taft to serve as a member of the commission and as vice chairman. Mr. Brooks visited Alaska with the other members of the commission, leaving Washington September 3 and returning December 1, 1912. The resulting report was submitted to the President and by him transmitted to Congress January 20, 1913.

REPORT ON LAND CLASSIFICATION.

A feature of special interest in connection with the year's work was the preparation for publication of Bulletin 537, "The classification of the public lands." This bulletin contains contributions by many authors, including the Director of the Survey, practically all the technical force of the land-classification board, and many of the geologists and engineers of the other branches who are engaged in the field work of classification. The object of this publication was to set forth in compact and usable form the history and origin of the Survey's classification work, the basis of that work in law and in the administration of law, and briefly the processes involved both in the original field investigations and in the office study and disposition of field results. The work has grown from small beginnings to a complete organization and a complete system of procedure. It touches upon public-land problems at many points, so that it seemed desirable, both from the point of view of members of the Survey and from that of the public, to set forth, as compactly and clearly as possible, the general features of the organization and the general principles which govern the work. The preparation of the bulletin involved the diversion of a considerable portion of the energies of the land-classification board staff for a part of one or two months of the fiscal year.

* * * * *

WORK OF THE YEAR.**DECREASE IN APPROPRIATION.**

The appropriations made directly for the Geological Survey showed a decrease of \$10,000 as compared with those for the fiscal year 1912, this amount having been temporarily cut off from the appropriation for the investigation of Alaskan mineral resources. This action was taken by Congress on account of the delay in making the appropriation and the belief by Congress that the full appropriation would not be needed. Owing to the extreme lateness in making the appropriation, and therefore providing for working funds, considerable less than the usual amount of field work was accomplished, the field season being on this account thus cut down practically one-half. However, as soon as the money became available parties were rushed to the field and the utmost endeavors were made to turn out something approaching the present standard of work. Parties were kept in the field later than usual in the fall, considerable work being done after snowfall and more than the usual amount of work was done in the early spring.

* * * * *

REPORT OF THE DIRECTOR OF THE BUREAU OF MINES.

JOSEPH A. HOLMES, *Director.*

PURPOSE OF THE BUREAU OF MINES.

The new organic act, approved February 25, 1913, establishes a bureau of "mining, metallurgy, and mineral technology, to be designated the Bureau of Mines."

The general function or purpose of the Bureau of Mines is to conduct, in behalf of the public welfare, such fundamental inquiries and investigations as will lead to increasing safety, efficiency, and economy in the mining industry of the United States. The two phases of the industry of the greatest national concern are those that have to do with better safeguarding the lives of our miners and insuring a more efficient, or less wasteful, development and use of our mineral resources.

These inquiries and investigations are general and national in scope. Although recognizing the fact that the welfare of the industry or the welfare of the nation as a whole depends largely upon the welfare of individual citizens, Congress has especially prescribed that the bureau shall not conduct investigations in behalf of private parties, nor participate in the promotion of individual enterprises or properties.

The opinion, often expressed by those opposed to this work, that the purpose of the Bureau of Mines is to increase the profits of big mine owners, is, therefore, untrue and misrepresents both the intent of Congress and the aims of the bureau.

There are cases, as in the waste of natural gas, coal, and other important resources, in which the temporary profits of the individual may not coincide with the more permanent public welfare, for his temporary profits may be the greater because of the fact that he follows wasteful and, though less expensive, dangerous mining methods. In such cases it is the duty and the purpose of this bureau to show, if possible, how the public welfare can be protected by decreasing the hazards and the waste, without meanwhile destroying personal initiative and the profits of individual enterprise. And it is certain that the broad fundamental researches conducted by the bureau can not fail to confer, in one way or another, increasing benefits on the individual prospector, miner, and mine owner, as well as on the general public.

The new organic act which serves as a basis for the work of the bureau is given below. In this new act, Congress has widened the scope, enlarged the purposes, and more clearly outlined the work of the bureau, as is indicated by the language of the act, which establishes "A bureau of mining, metallurgy, and mineral technology, to be designated the Bureau of Mines."

The new organic act further prescribes—

That it shall be the province and duty of the Bureau of Mines, * * * to conduct inquiries and scientific and technologic investigations concerning mining, and the preparation, treatment, and utilization of mineral substances with a view to improving health conditions, and increasing safety, efficiency, economic development, and conserving resources through the prevention of waste in the mining, quarrying, metallurgical, and other mineral industries; to inquire into the economic conditions affecting these industries; to investigate the mineral

fuels and unfinished mineral products belonging to or for the use of the United States, with a view to their most efficient mining, preparation, treatment, and use; and to disseminate information concerning these subjects in such manner as will best carry out the purposes of this act.

In another section of this act, Congress specifies as coming under the more general language given above, and to be the subject of special reports and recommendations, the following subjects:

The nature, causes, and prevention of accidents and the improvement of conditions, methods, and equipment, with special reference to health, safety, and prevention of waste in mining, quarrying, metallurgical, and other mineral industries; the use of explosives and electricity, safety methods and appliances, and rescue and first-aid work in said industries; the causes and prevention of mine fires; and other subjects included under the provisions of this act.

THE NEW ORGANIC ACT.

This new organic act of the Bureau of Mines, as enacted by Congress, was signed by the President on February 25, 1913. It widens the scope and enlarges the purposes of the bureau, and it authorizes a work more nearly commensurate with the importance and the needs of the world's greatest mining industry. This legislation came as a result of a general and urgent demand throughout the country, but as yet no adequate provision has been made for rendering these larger plans effective.

The text of the new act (37 Stat., 681) is as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the act to establish in the Department of the Interior a Bureau of Mines, approved May sixteenth, nineteen hundred and ten, be, and the same is hereby, amended to read as follows:

That there is hereby established in the Department of the Interior a bureau of mining, metallurgy, and mineral technology, to be designated the Bureau of Mines, and there shall be a director of said bureau, who shall be thoroughly equipped for the duties of said office by technical education and experience, and who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall receive a salary of six thousand dollars per annum; and there shall also be in the said bureau such experts and other employees, to be appointed by the Secretary of the Interior, as may be required to carry out the purposes of this act in accordance with the appropriations made from time to time by Congress for such purposes.

SEC. 2. That it shall be the province and duty of the Bureau of Mines, subject to the approval of the Secretary of the Interior, to conduct inquiries and scientific and technologic investigations concerning mining, and the preparation, treatment, and utilization of mineral substances with a view to improving health conditions and increasing safety, efficiency, economic development, and conserving resources through the prevention of waste in the mining, quarrying, metallurgical, and other mineral industries; to inquire into the economic conditions affecting these industries; to investigate explosives and peat; and on behalf of the Government to investigate the mineral fuels and unfinished mineral products belonging to, or for the use of, the United States, with a view to their most efficient mining preparation, treatment, and use; and to disseminate information concerning these subjects in such manner as will best carry out the purposes of this act.

SEC. 3. That the director of said bureau shall prepare and publish, subject to the direction of the Secretary of the Interior, under the appropriations made from time to time by Congress, reports of inquiries and investigations, with appropriate recommendations of the bureau, concerning the nature, causes, and prevention of accidents, and the improvement of conditions, methods, and equipment, with special reference to health, safety, and prevention of waste in the mining, quarrying, metallurgical, and other mineral industries; the use of explosives and electricity, safety methods and appliances, and rescue and first-aid work in said industries; the causes and prevention of mine fires; and other subjects included under the provisions of this act.

SEC. 4. In conducting inquiries and investigations authorized by this act neither the director nor any member of the Bureau of Mines shall have any personal or private interest in any mine or the products of any mine under investigation, or shall accept employment from any private party for services in the examination of any mine or private mineral property, or issue any report as to the valuation or the management of any mine or other private mineral property: *Provided*, That nothing herein shall be construed as preventing the temporary employment by the Bureau of Mines at a compensation not to exceed ten dollars per day, in a consulting capacity or in the investigation of special subjects, of any engineer or other expert whose principal professional practice is outside of such employment by said bureau.

SEC. 5. That for tests or investigations authorized by the Secretary of the Interior under the provisions of this act, other than those performed for the Government of the United States, or State governments within the United States, a reasonable fee covering the necessary expenses shall be charged, according to a schedule prepared by the Director of the Bureau of Mines and approved by the Secretary of the Interior, who shall prescribe rules and regulations under which such tests and investigations may be made. All moneys received from such sources shall be paid into the Treasury to the credit of miscellaneous receipts.

SEC. 6. That this act shall take effect and be in force on and after its passage.

THE OLD ORGANIC ACT ESTABLISHING THE BUREAU.

The organic act establishing the bureau (36 Stat., 369) was approved May 16, 1910, and became effective July 1, 1910. It provided in part, sections 2 and 4, as follows:

SEC. 2. That it shall be the province and duty of said bureau and its director, under the direction of the Secretary of the Interior, to make diligent investigation of the methods of mining, especially in relation to the safety of miners, and the appliances best adapted to prevent accidents, the possible improvement of conditions under which mining operations are carried on, the treatment of ores and other mineral substances, the use of explosives and electricity, the prevention of accidents, and other inquiries and technologic investigations pertinent to said industries, and from time to time make such public reports of the work, investigations, and information obtained as the Secretary of said department may direct, with the recommendations of such bureau.

SEC. 4. The Secretary of the Interior is hereby authorized to transfer to the Bureau of Mines from the United States Geological Survey the supervision of the investigation of structural materials and the analyzing and testing of coals, lignites, and other mineral fuel substances and the investigation as to the causes of mine explosions; and the appropriations made for such investigations may be expended under the supervision of the Director of the Bureau of Mines in manner as if the same were so directed in the appropriations acts; and such investigations shall hereafter be within the province of the Bureau of Mines, and shall cease and determine under the organization of the United States Geological Survey; and such experts, employees, property, and equipment as are now employed or used by the Geological Survey in connection with the subjects herewith transferred to the Bureau of Mines are directed to be transferred to said bureau.

The act aforesaid was subsequently amended by a clause in the act making appropriations for the sundry civil expenses of the Government for the fiscal year 1911 by striking out so much of section 4 as related to the transfer to the Bureau of Mines of the supervision of the investigations of structural materials and the equipment therefor; but, in accordance with the organic act, on the subsequent organization of the Bureau of Mines (July 1, 1910) there was transferred from the United States Geological Survey to the Bureau of Mines "such experts, employees, property, and equipment" as had been previously "employed or used by the Geological Survey" in "the analyzing or testing of coals, lignites, and other mineral fuel substances and the investigation as to the causes of mine explosions."

THE WORK OF THE BUREAU OF MINES SINCE ITS ESTABLISHMENT.

The work of the bureau during the three years from its establishment, July 1, 1910, to June 30, 1913, has been mainly the investigation of problems that have to do with the causes and prevention of coal-mine explosions and the safeguarding of the lives of coal miners. In addition, considerable work has been done in the way of analyzing and testing coal and other mineral fuels belonging to or for the use of the Government of the United States, and during the fiscal year ending June 30, 1913, certain investigations looking to greater safety and the prevention of waste in the metal mining and miscellaneous mineral industries have been begun on a small scale.

INVESTIGATIONS OF COAL-MINE EXPLOSIONS.

In connection with the investigations concerning coal-mine explosions much has been done toward determining the differences in explosibility of the different types of coal dust found in mines of the various coal fields, and this investigation is still under way. A much larger amount of work has been done in connection with the investigations into the causes of coal-dust and gas explosions, the conditions under which these explosions occur, and the possible means of preventing them. These investigations have been conducted in both the chemical and physical laboratories of the bureau, and the results obtained in these laboratories have been repeated, as far as has been practicable, in the experimental coal mine that the engineers of the bureau have opened at Bruceton, some 12 miles south of Pittsburgh.

INVESTIGATIONS OF EXPLOSIVES USED IN MINING.

An extended investigation has been made into the nature of the explosives used in coal-mining operations and the possibilities of so changing the character of these explosives as to diminish the hazards connected with their use, and especially with a view to lessening the possibilities of coal-mine disasters through the use of improper explosives or the improper use of explosives in mining. As yet, however, only a beginning has been made concerning the use of explosives in metal mining and quarrying, a subject almost as important and diversified as that of the use of explosives in coal mining.

INVESTIGATIONS OF THE USE OF ELECTRICITY IN COAL MINING.

Another extensive series of investigations has been carried on to determine the extent to which electricity used in coal mines may cause dust or gas explosions, and the possibility of better safeguarding the use of electricity in coal-mining operations with a view to reducing the possibility of its causing such explosions or of injuring miners, by shock and otherwise. No work whatever has been done to determine the safety and the proper methods of use of electricity in metal mining, and many coal-mining safety problems remain untouched.

INVESTIGATIONS OF SAFETY LAMPS.

Another line of investigations has related to safety lamps for use in gaseous coal mines. A number of tests have been made to determine the relative merits of different types of safety lamps with a view to improving their utility as a means of furnishing light to miners, and also their relative value and safety as a means of determining the presence or absence of explosive gases in the mines. This investigation has been extended to cover portable electric lamps as well as safety lamps using illuminating oils. No investigations or tests have been made to determine the relative efficiency, economy, and safety of the various types of electric lamps and of oil lights or candles for illumination in metal mines.

INVESTIGATIONS OF MINE-RESCUE AND FIRST-AID APPARATUS.

Still another series of investigations has been conducted in connection with an endeavor to determine the relative merits of, and the possibility of improving, the types of apparatus used by miners in rescue and first-aid work in times of mine disasters. In connection with these investigations the bureau has established six mine-rescue stations, and has purchased, equipped, and operated eight mine-rescue cars and one rescue motor-truck, in all of which the purpose has been not only to conduct certain practical experiments with a view to developing better methods and better equipment in mine-rescue and first-aid work, but also to train the miners at a number of different points in the different coal fields in the proper use of the best equipment and methods. This is done so that in case of a disaster at any mine a sufficient number of trained men can be found at or near such mine for immediate rescue and first-aid work in the mine with which they are personally familiar.

INVESTIGATIONS OF MINERAL WASTE.

At the beginning of the fiscal year under consideration, Congress made an initial appropriation of \$50,000 for inquiries and investigations into the mining and treatment of ores and other mineral substances, with special reference to safety and waste. These investigations as conducted during the year have related largely to the nature and extent and methods of preventing waste in the natural-gas and petroleum industries, and the problems of safety and waste in certain of the metal-mining industries.

WASTE OF OIL AND NATURAL GAS.

The oil and gas waste investigations have been carried on mainly in the States of Oklahoma, Wyoming, and California. These are described in another part of this report (pp. 467, 551-552).

SMELTER FUMES.

An investigation has been initiated in connection with the smelter-fumes problems, and for this purpose a small laboratory has been established in San Francisco, where especial attention is being given

to preventing the escape into the atmosphere of sulphur, arsenic, and other deleterious materials, and the loss of other more valuable materials in connection with smelter operations.

SAFETY AND HEALTH CONDITIONS AT METAL MINES.

Some work has been done under this appropriation toward an investigation of the general safety and health conditions in certain of the metal-mining districts; but this field is so large a one and its conditions are so varied that only a small part of the field and only a few conditions could be examined with the funds available.

INVESTIGATIONS OF RADIUM AND OTHER RARE METALS.

The mineral-waste investigations have also included certain of the rarer mineral substances, such as radium, uranium, and vanadium, which, it was found, were being mined and treated by methods unnecessarily wasteful. The main purpose of this investigation was to determine whether and how a supply of radium might be obtained within the United States sufficient to answer the demands from the numerous hospitals in this country for radium to use in the treatment of cancer. For these waste investigations a small laboratory has been established in Denver, Colo., in which State our principal deposit of radium-bearing ores occur, and the especial purpose of the investigations in this laboratory has been the development of methods of treating these ores and of extracting the radium in the United States, and thus retaining in this country the supply of radium so greatly needed.

It is estimated that in the United States 75,000 persons die each year from cancer. Radium is considered the most promising cure for certain types of cancer, and in many cases where surgical operations are not practicable it is said to be the only known cure for this terrible disease. But the serious barrier to progress in demonstrating these facts is the scarcity of radium. There is probably not more than 30 grams (about 1 ounce) of radium now available for use in such treatment in all countries. Of this amount there is probably not more than 2 grams of radium bromide in the United States, in the hands of a few surgeons. Probably 15 grams of radium bromide was produced during 1912; and of this 15 grams nearly 11.5 grams was extracted in various European countries from ores shipped to them from the United States—mainly from Colorado and Utah.

During 1913 there was a total production of 2,140 tons of radium-bearing ores in the United States, of which about 45 per cent of the ores and (the exported ores being richer) a little more than 50 per cent of the radium content were shipped abroad. Because of a new plant now being erected at Liverpool by an English corporation controlling 60 claims in Colorado and Utah, and the larger purchases of ores by other foreign corporations, the exports of radium ores promise to be much larger during 1914.

Meanwhile, the American hospitals are vainly endeavoring to purchase and bring back to the United States for their own use some small part of this radium, even at such prices as \$120,000 to \$160,000 per gram, or \$500,000 to \$800,000 for the 5 grams of radium that a large hospital should have or have access to for special cases.

The fact that thus far they have been able to obtain not more than 2 grams of this radium is due to the fact that in Europe national governments, well-endowed national radium institutes, municipalities (as in Germany), radium banks, hospitals, and speculative agencies are all endeavoring to procure and retain supplies of radium for use in the several European countries, and the American people are only now awakening to an appreciation of its importance. The Austrian Government has expended more than \$600,000 in the purchase and development of radium-bearing ore deposits within its own territory; the United States, however, has been giving away its more extensive radium-bearing deposits, the ores of which, during the past few years, have been shipped abroad for treatment by secret processes to supply the radium for European demands.

SOME BENEFICIAL RESULTS OF THE BUREAU'S WORK.

During the few years since the beginning of the mine-safety investigations authorized (during the winter of 1907-8) by Congress there has been a marked increase in the general interest taken by miners, mine owners, and the general public in all questions relating to safety; and, in spite of the fact that there has been a considerable increase in the amount of coal mined and in the number of coal miners employed, there has been a marked decrease in the number of fatalities and bodily injuries in mining operations. The increase in fatal coal-mine accidents in 1913, it is hoped, will be only a temporary break in this improvement.

It is not claimed that, acting alone, the Bureau of Mines has brought about these changes for the better; nor, indeed, is it claimed that the bureau has been the main factor in bringing about these improvements. The bureau has endeavored to organize and lead in this movement; it has conducted a series of investigations and has disseminated a large amount of information bearing on accident prevention, and in this work it has had the hearty aid and cooperation of the State mine inspectors, mine owners, the miners, and the mining journals of the country.

A few of the most notable lines of improvement in the safety conditions in coal mines which the bureau has helped to bring about are as follows:

WORK OF THE BUREAU ENCOURAGES MINE OWNERS AND STATES TO GREATER ACTIVITY.

One beneficial result from the work of the bureau is that it encourages research and inspection, the purchase of mine rescue and first-aid equipment, and the maintenance of mine rescue corps by the private mining companies. It is sometimes claimed that investigations and other activities on the part of the National Government discourage similar activities on the part of mining companies. But such has not been the case. On the contrary, the activities of the Bureau of Mines have increased the work of private laboratories and of engineers in private practice or employed by private mining companies, and in the various mining camps where our rescue cars have done training and demonstration work, mine-rescue and first-aid corps or squads have been organized quite generally among the

miners and have been equipped and maintained at the expense of the mine owners. Meanwhile, also, the several mining States have enlarged and strengthened their inspection work. The extent of this private work is indicated by the following statement:

INCREASING NUMBER OF PRIVATELY OWNED MINE-RESCUE STATIONS.

At the time the bureau first undertook the development of modern protective methods, both as regards rescue work at mine disasters and recovery work at mine fires, there were in the United States, as far as known, only a few sets of breathing apparatus, and these were in use in the metal mines at Anaconda, Mont. There are now owned and in use by 170 private mining companies 76 rescue stations and about 1,200 sets of such apparatus, besides auxiliary equipment for fire fighting, in addition to the large number of such apparatus owned by the bureau and widely distributed among its various cars and stations.

The bureau has endeavored to extend the movement for the establishment of rescue stations patterned after its own, at which miners may be locally trained in mine-rescue and first-aid work, so that there will be immediately available in times of disaster groups of organized men trained in scientific and rational rescue and recovery methods. There are now in the different parts of the country several hundred such groups of men. A number of the larger mining operators have established 76 rescue stations; mine operators now own 12 and two States own 4 rescue cars equipped somewhat after the manner of those operated by the Bureau of Mines; and the movement has otherwise been vigorously developed not only in the coal-mining but to some extent in the metal-mining districts.

The next logical step in the organization of this work is now being taken in two mining districts, namely, that of establishing central rescue stations owned and controlled by groups of mine operators. By this plan, instead of each mining company having a few sets of rescue apparatus and a few men trained in the work, a much less individual expenditure establishes a well-equipped corps of professional rescue men at a group of mines. As a result there is available in time of disaster a nucleus of men who keep in physical condition for the arduous work of mine rescue and who have their apparatus and equipment ever ready for an emergency, as compared with the amateur forces now available, who, scattered among different mines, are not able to keep themselves and their equipment in the best condition of preparedness.

Gratifying as has been the progress in turning over to the mine owners the local training and rescue operations, there has been no diminution in the demands received by the bureau for its assistance in organizing and guiding such work. The rescue force of the bureau is merely relieved of the maintenance of the many private rescue teams and of the burden of ordinary rescue work. Its efforts are devoted to the pioneer educational work in the various districts and to the training of many thousands of miners for this work. Its services are now required to an even greater extent than in the past for the training of private rescue-station forces and for inspection and advice concerning the care of their equipment, and for information regarding the latest progress in all lines of rescue and first-aid work.

IMPROVEMENTS IN MINE EXPLOSIVES.

A revolution has been brought about in the explosives used in coal mines containing inflammable gas or dust.

At the time of the inauguration of this work black powder, with its long flame and poisonous gases, was almost universally used in coal-mining operations in the United States. One of the first investigations undertaken by the bureau was that looking to improvement in the character of the explosives used. As a result of conferences with mine owners, miners, and manufacturers of explosives, a number of these manufacturers agreed to undertake the making of a new type of explosive that would have for its special characteristics an explosion flame of short duration and relatively low temperature.

The bureau cooperated in the development of this new type of explosives by establishing the necessary standard with regard to safety, and by testing the explosives submitted from time to time to determine whether they had reached such standard, or the manner in which and the extent to which they failed to reach such standard. As a result of this work, within a little more than three years' time, the use of the new type of explosives, termed "permissible explosives," has become general in those mines where the risk of gas or dust explosions was a serious one. So rapid has been the introduction of the permissible explosives that, during 1912, more than 18,000,000 pounds of these explosives were used in the coal mines of this country. The present work of the bureau along these lines is to assure further improvements in these explosives, and especially to reduce the quantity of poisonous gases given off in firing shots, and to reduce the shattering effect of these shots; and also to bring about safer methods of handling and firing whatever explosives may be used in mining.

LESSENER DANGER FROM USE OF ELECTRICITY IN MINES.

Notwithstanding the large increase in the use of electricity in coal-mining operations, and also the increase in the number of mines in the past few years, there has been no increase in the number of fatalities from electric shock or burns, as the following table shows. But the ignition of gas and dust by electric short circuits has, it is believed, been the cause of certain great explosions that resulted in a large number of fatalities not included in this list.

Fatalities in coal mines due to electricity and to gas and dust explosions.

[Figures for 1907-1909 based on those of United States Geological Survey. Figures for 1910-1912 based on those in Bulletin 69, Bureau of Mines.]

Year.	Total killed.	Killed by gas and dust explosions.	Killed by electricity (shock or burns).	Number killed per 1,000 employed.	
				Gas and dust explosions.	Electricity (shock or burns).
1907.....	3,125	947	(a)	1.39	(a)
1908.....	2,450	396	(a)	.57	(a)
1909.....	2,412	341	(a)	.51	(a)
1910.....	2,840	518	79	.71	0.11
1911.....	2,719	379	87	.52	.12
1912.....	2,360	301	76	.40	.10

a Electricity not given as separate cause.

The bureau has conducted an investigation concerning the insulation of electric wires in coal mines and has recommended a number of improvements. It has conducted a series of investigations with a view of developing explosion-proof motors, approved types of fixed and portable electric lamps, and better electric signals in mines, regarding all of which there is serious need of additional research.

REDUCTION OF MINE EXPLOSIONS.

The mine-safety appropriations of the Bureau of Mines have been more largely devoted to a possible reduction of mine explosions than to any other phase of mine-safety work. Congress made its first appropriation for investigation into the causes and possible prevention of mine explosions in 1908, and appropriations for carrying forward such an investigation have been made each year since that time. Extended laboratory tests have shown the differences in explosibility of coal dust collected from different coal mines in different parts of the country, and this particular line of research has been much facilitated by the opening of the experimental mine at Bruceton, Pa., which has, however, been ready only within the past few months for the making of serious investigations. As a result of these researches and the educational campaign carried on by the engineers of the bureau with the cooperation of State mine inspectors, mine operators, and the miners, the proportionate loss of life from mine explosions decreased from 30.3 per cent of the total deaths in 1907 to 12.7 per cent of the total deaths in 1912. Although, unfortunately, mine explosions continue to occur not only in the United States but in other countries, much information is being gathered concerning the causes of such explosions, and it is believed that with a few years more of continuous investigation and educational work, the causes will be so understood that the application of more thoroughly preventive measures will be practicable and that then these awful disasters may be entirely prevented.

GENERAL REDUCTION OF MINE ACCIDENTS.

Although the investigations of the Bureau of Mines during the past few years have been limited largely to the problems relating to coal-mine explosions and the causes of such explosions, including explosives, electricity, open or defective lights, etc., the general educational work has included all classes of mine accidents, and through the cooperative efforts of mine inspectors, mine owners, and miners there has been a reduction in the aggregate number of coal-mine accidents and a general improvement in mine-safety conditions.

There has not, however, been a similar decrease of fatal accidents in the metal mines of the country, nor has the bureau been able to extend its investigations and educational work as it should to that branch of the mining industry.

The decrease in the loss of life in coal mines since 1907, the year prior to the beginning of the mine-safety investigations authorized by Congress, is shown by the following tabular statement:

Number of men killed in and about the coal mines in the United States in the calendar years 1907 to 1912, inclusive, with death rates.

Years.	Number killed.			Production per death (short tons).
	Total.	Per 1,000 employed.	Per 1,000,000 short tons mined.	
1907.....	3,197	4.88	6.93	144,325
1908.....	2,449	3.64	6.05	165,346
1909.....	2,668	4.00	5.79	172,699
1910.....	2,840	3.92	5.66	176,618
1911.....	2,719	3.73	5.48	182,501
1912.....	2,360	3.27	4.42	226,469

In the fiscal year ending June 30, 1913, engineers of the Bureau of Mines investigated 76 accidents; of this number 6 were not properly mine accidents, so that the number of mine accidents investigated during the year was 70. The principal items in regard to these accidents were as follows: Accidents investigated, 70; total number killed in accidents, 223; suffocated, 42; rescued by Bureau of Mines men, 12; rescued by others, 90; escaped unassisted, 142.

The causes of these accidents are stated in the following list:

Causes of disasters.

Lightning.....	1
Cave-in.....	4
Flooded mine.....	2
Fire.....	19
Explosion.....	33
Hoisting.....	2
Fire and explosion.....	4
Opening a fire area.....	2
Mine cave and fire.....	1
Black damp.....	1
Collapse of tippie.....	1

70

As shown in the accompanying table, there has been an increase in the number of accidents investigated, a decrease in the number killed, and a decrease in the number suffocated.

Statement of mine disasters investigated, showing number of persons killed, suffocated, and rescued, 1907-1913.

	1907	1908	1909	1910	1911	1912	1913 to June 30.	Total
Number of disasters.....	12	16	25	25	35	47	40	200
Number of persons killed.....	837	331	494	522	462	283	141	3,070
Number suffocated.....	269	114	80	200	201	51	78	993
Number rescued by Bureau of Mines men.....	0	2	29	20	13	7	12	83
Number rescued by others.....	21	16	124	243	81	84	48	617
Number who escaped unassisted.....	5	33	403	132	18	117	69	777

As shown in the accompanying table, there was an increase in the number of accidents investigated, a decrease in the number killed,

Number of mine disasters, by States, 1907-1913.

States.	1907	1908	1909	1910	1911	1912	1913 to June 30.	Total.
Alabama.....	1		1	3	1	2	1	9
Arkansas.....							1	1
Colorado.....	1			5	4	6	2	18
Idaho.....					1	2	0	3
Illinois.....	2	4	7	2		2	1	18
Indiana.....			2	1	1	2	4	10
Kansas.....					1	4	3	8
Kentucky.....			1	4	1	3	4	13
Michigan.....					2	1	3	6
Missouri.....						0	0	1
Montana.....					1			1
Nevada.....					2		0	2
New Mexico.....	1					0	0	1
Ohio.....				1	1	1	2	6
Oklahoma.....		2	3	4	5	9	2	25
Pennsylvania.....	2	6	6	2	6	10	15	47
Tennessee.....			1		1	0	1	3
Virginia.....				1	1	1	0	3
Washington.....			1	2	2	0	0	5
West Virginia.....	5	3	2		4	3	1	18
Wyoming.....		1				1	0	2

GROWTH OF MINE-RESCUE AND FIRST-AID WORK.

The improvement in behalf of better and more extended mine-rescue and first-aid service at the larger coal mines of the country has gone forward slowly but steadily. Each of the bureau's mine-rescue stations, and especially each of its mine-rescue cars, has been the means of carrying forward this important improvement. In this work, as in its other efforts for greater safety, the bureau has had the active cooperation of the mine inspectors, the mine owners, and the miners, and in extending first-aid work in connection with mining operations it has had the active and helpful cooperation of the American National Red Cross.

The mine-rescue and first-aid training has now been under way more than three years, and during this time 31,203 miners have been trained in the use of the necessary equipment and methods. In connection with mine disasters the Bureau of Mines men have rescued, through the use of breathing apparatus, 83 miners. A larger number of miners have been rescued by others, many of whom were trained or aided in the use of modern rescue methods by the bureau, and a very much larger number of miners have been aided or brought to recovery through the prompt first-aid work of miners trained by the bureau, by the American National Red Cross, and by other agencies.

In addition to the actual saving of life, an important part of the work has been the lessening of the suffering of injured miners through the prompt and expert services of the men trained in first-aid work. This work has not only reduced the severity of injuries and kept some men from dying, but it also has enabled miners to resume work much sooner than they could have otherwise. This is a conservation that is difficult to estimate in dollars and cents.

SOME SAVINGS FROM MINERAL-WASTE INVESTIGATIONS.

Some important results have already come from the bureau's investigations of the problems of mineral waste. The most notably beneficent of such results has been the lessening of waste of natural gas. The researches of the engineers of the bureau have been conducted on a small scale in California, Wyoming, Alabama, and other States; on a larger scale mainly in Oklahoma. The result in the latter State, in a single oil and gas field, has been a saving of natural gas valued at more than \$10,000,000, which is more than six times the aggregate cost of the Bureau of Mines from its establishment to the present date.

The saving effected through the prevention of waste of oil and coal by the researches and demonstration work of the bureau has been large, ranking next in importance, and probably equal to the saving in natural gas. But the funds available for such work have been insufficient for any extended researches or educational work.

Investigations looking to the prevention of existing wastes in the zinc, lead, and copper industries have been started, but as yet have not gone far enough to be widely effective. The waste in these industries is large and the need of reform is urgent. The researches being conducted in efforts to prevent the waste in smelter fumes of materials that may be injurious if turned into the atmosphere, but useful if saved in the solid form, already give promise of important results, but these researches have not as yet been carried sufficiently far to warrant claims of extensive improvement.

Researches regarding ores and the rarer mineral substances, with reference to safety and the prevention of waste, are yielding important results with regard to the recovery of such valuable products as radium and mesothorium. This is the bureau's newest line of research looking to waste prevention, but though necessarily organized on a small scale it already promises to be one of the most important in beneficial results to the Nation.

The fuel researches conducted by the bureau have developed marked economic and other improvements in the purchase and handling of fuel in nearly all branches of the Government service. During the past several years the resulting financial saving in the purchase of these fuels has been more than sufficient to cover the cost of the investigations; and the economic results of these researches have extended far beyond the savings effected in the fuel consumption of the Government. The more efficient methods of purchasing coal developed for the National Government are now being adopted, with beneficial results, by many State and municipal governments and by many of the larger private industrial plants. The researches in behalf of greater economy and efficiency in fuel consumption have led to large improvements and have stimulated similar researches among the larger private corporations in different parts of the country.

* * * * *

WHAT THE NATION LOSES FROM MINE ACCIDENTS AND MINERAL WASTE.

There is no exact measure of the losses from mine accidents and mineral waste, but we may use an approximate measure. If the increasing rate of coal-mine fatalities during 1905, 1906, and 1907, the three years prior to the beginning of this work, had continued throughout the four subsequent years, since Congress began these mine-explosion investigations, the number of fatalities would have been at least 4,000 greater than they have actually been. At approximately the average compensation paid per man in fatal mine accidents of the past few years, this would represent a national loss of \$12,000,000 in the four years. On the same basis, the 30,000 men killed during the past 10 years in the mines of the United States would mean a loss of more than \$100,000,000 in national productiveness. If it is remembered that for every fatal accident there are at least 3 to 5 serious nonfatal accidents, and 12 lesser accidents which incapacitate for one or more days, it will be seen that the actual national loss would have been much larger.

In mineral waste, the national loss is estimated to be not less than \$1,000,000 a day. This loss for the most part is not such as may be considered as representing a deferred use of resources, but represents a total permanent loss of national wealth.

The mineral losses are considered as national losses for the reason that the mineral products of the country, becoming articles of interstate commerce, are used by the people of all the States quite regardless of their source. For the same reason, the cost of investigations looking to the prevention of these losses should not fall upon any one State. If conducted by each of the States, the result would be extensive and unnecessary duplication of effort and expenditure. We can not expect the individual operator to bear the cost of such investigations for the reason that waste prevention with him is a question of temporary profits, and his temporary profits, in many cases at least, are greater by virtue of his following wasteful methods. With both the community and the Nation the situation is often quite different, and they must safeguard their own permanent welfare.

* * * * *

SOME FEATURES OF THE YEAR'S WORK.

The more important problems of the year related to the prevention of accidents and loss of life in coal mines, the efficient purchase and utilization of fuels by the Government, and the increase of safety and efficiency in metal-mining operations. Some of the notable features of the work, the progress made, and the more significant results obtained are briefly described in the following pages.

MINE-ACCIDENT INVESTIGATIONS.

Perhaps the most important safety investigations conducted by the bureau were those dealing with coal-mine explosions and disastrous mine fires, but of almost equal importance were those relating to the causes and the means of prevention of accidents in both coal and metal mines.

Studies to determine the conditions governing the inflammability of coal-mine gases and dusts and the use of explosives were continued.

The Gebo mine, at Gebo, Wyo., which is on Government land, was examined and regulations were framed, which were subsequently approved by the Secretary of the Interior, to govern its operation.

With the approval of the Commissioner of the Bureau of Indian Affairs, investigation was begun of gas, oil, and coal leases on land belonging to the Indian tribes, chiefly in Oklahoma, looking to the prevention of waste of mineral resources, and, in the case of coal mines, to safer conditions.

All mines in the United States at which there were fatal explosions or fires, and some in which fires or explosions occurred without loss of life, were visited by one or more engineers of the bureau, who, in cooperation with or with the approval of the State mine officials, investigated the cause of the disaster or fire, rendered such aid as was possible, and also gave such counsel as would tend to prevent repetition of the accident or disaster.

OIL AND GAS WELLS THROUGH WORKABLE COAL BEDS.

In response to requests from various sources, a conference was held at Pittsburgh, February 7 and 8, 1913, to consider the protective measures necessary to insure the safety of mining operations in gas and oil fields and the security of wells passing through coal mines. Gas-well, oil-well, and coal-mine operators in the vicinity of Pittsburgh, as well as State geologists and State mine inspectors from all States interested, were invited to attend. William E. Fohl, of Pittsburgh, was chairman, and O. P. Hood, chief mechanical engineer of the Bureau of Mines, was secretary of the conference. The papers presented and the ensuing discussions at the conference were published by the bureau as Bulletin 65.

A committee representing coal miners, gas and oil well owners, State inspectors, State geologists, and the Bureau of Mines was chosen to modify the proposed regulations in accordance with the views expressed at the conference. This committee presented a revised report to a general conference on March 11. The proposed regulations and accompanying comment thereon were published by the bureau in Technical Paper 53.

INVESTIGATIONS OF COAL IN BERING RIVER FIELD, ALASKA.

In connection with the survey and investigation by the Navy Department of coal in Alaska for use on ships of the United States Navy and any vessel of the United States, C. A. Fisher and W. R. Calvert, mining geologists, and R. Y. Williams and S. S. Smith, mining engineers of the Bureau of Mines, investigated the Bering River field in order to obtain a sample of coal for a steaming test on a vessel of the Navy. They selected a place on Trout Creek as being the most promising place from which to take the desired sample. Drifts were run on a number of veins, most of the work being done on the so-called "Big Vein," 16 feet to 29 feet thick. A large sample, 855 tons, was obtained and sacked for transportation to the coast for subsequent testing on a naval steamship.

COOPERATIVE WORK IN ILLINOIS.

Mine investigations in Illinois, having as their purpose the increase of safety and the lessening of waste in coal mining, were continued, in cooperation with the University of Illinois and the Illinois Geological Survey, during the fiscal year.

The State geologist examined and studied the geological features at 75 mines, collected shale and fire-clay samples from 30 mines, and directed the taking of three to six samples at each of 70 mines; engineers of the Bureau of Mines examined 75 mines and investigated the character and fineness of the dust from coal-cutting machines, and chemists and physicists of the bureau made 20,000 tests in the study of the explosibility of dusts from Illinois mines.

INTERNATIONAL CONFERENCE OF MINING-EXPERIMENT STATIONS.

An international conference of mining experiment stations was held in Pittsburgh, September 14 to 21, 1912, to discuss plans and methods of carrying on experiments relating to mine safety and the interpretation and comparison of the results obtained, to suggest special experiments that could be made to most advantage at a particular station, and to form a permanent organization to promote the exchange of information.

In response to invitations sent to those countries having mine experiment stations or contemplating the establishment of such stations, delegates were present from Austria-Hungary, Belgium, and Germany, as follows: Austria-Hungary, Julian Czaplinski, royal mining engineer; Belgium, Victor Watteyne, inspector general of mines; Germany, Carl Beyling, bergassessor, director of the Dortmund experiment station. Charles E. Munroe, consulting explosives chemist, and George S. Rice, chief mining engineer of the Bureau of Mines, represented the United States, and the latter acted as secretary of the conference. William O'Connor, a mining engineer of Wales, was invited to take part in the meeting as an unofficial representative of Great Britain. J. Taffanel, director of the Lievin experiment station, who was to have represented France, was unexpectedly recalled just before the conference on account of a mine disaster.

Most of the time allotted to the conference was spent in reading papers and discussing investigations at the Pittsburgh experiment station and in observing coal-dust explosions at the experimental mine.

The delegates agreed that it was desirable to form a permanent organization; that the approval of the various nations to the forming of the organization and the appointment of the delegates be effected through the regular diplomatic channels; and that the next meeting of the conference be held, if possible, in 1914 in England or Belgium.

WORK OF MINE-RESCUE CARS AND STATIONS.

During the year over 46,000 persons (mainly miners) visited the mine-rescue cars and stations maintained by the bureau, nearly 33,000 miners attended the mine-safety lectures, and more than 6,000 miners

were given rescue or first-aid training. Miners and operators in all coal fields have taken active interest in the demonstration work of the bureau, and the number of operators who have organized and equipped mine-rescue corps at their own mines at their own expense has shown a most gratifying increase.

During the year car 8, with headquarters at Ironwood, Mich., began service in the copper and iron mining districts about Lake Superior. The work done by the crew of this car was received with much enthusiasm and both mine operators and miners have testified to its value. Some instruction was given in a few metal-mining camps in Colorado, notably at Aspen and Cripple Creek. At Aspen the crew of car 2 rendered valuable service in controlling a serious mine fire that threatened to stop mining operations.

MINERAL-TECHNOLOGY INVESTIGATIONS.

Perhaps the most striking result of the year's work was the demonstration of the value of the uranium and vanadium ores of Utah and Colorado as sources of radium, the losses attending the present methods of mining and marketing, and the need of developing methods by which the radium may be recovered in this country. Already, as a result of the bureau's investigations, producers of these ores have obtained better prices, waste has been lessened, and at least one American firm is making radium salts.

As a result of other investigations, the bureau has pointed out the preventable losses in the mining and treatment of feldspar in the Southern States and the saving to be obtained, to the resulting profit of many small operators, by the use of simple but efficient methods; has demonstrated the high quality of deposits of fuller's earth in this country and the possibility of using American fuller's earth to replace practically all of the fuller's earth now imported; and has ascertained present wastes in the production of nonferrous alloys and the advantages to be gained by the use of electric furnaces in the production of these alloys.

INVESTIGATIONS RELATING TO HEALTH CONDITIONS IN THE MINERAL INDUSTRIES.

Some progress was made in investigations relating to health conditions in mining and metallurgical industries, the occupational diseases common to certain callings, and the sanitary conditions in mining communities. The results of inquiries concerning health conditions in and about kaolin and feldspar mines in the Southern States and the sanitation of mining villages in the Birmingham district, Alabama, were published during the year, and the results of inquiries relating to occupational diseases in brass foundries and similar metallurgical establishments were prepared for publication.

FUEL INVESTIGATIONS.

Under the wording of appropriation acts, the fuel investigations conducted by the Bureau of Mines have been restricted to the analyzing and testing of fuels belonging to or for the use of the United States; consequently the various technologic researches and the

routine work relating to the examination of fuels under this bureau related chiefly to two general lines of inquiry, as follows:

1. The inspection and analysis of coals, lignite, and other mineral fuels purchased under specifications for the use of the Government, to ascertain whether these fuels conform to the stipulations of the contract under which they are purchased, and the ascertaining of the most efficient equipment for burning these fuels.

2. The investigation of coal, lignite, and other mineral fuels belonging to the Government.

The work of inspecting and analyzing fuel purchases was improved and made more efficient during the year. The samples represented coal and fuel oil for use on naval vessels and at Government power plants, public buildings, and naval stations in different parts of the United States and in the Panama Canal Zone.

In the fiscal year 1913 the purchase of coal by the Government under specifications providing for payment according to the quality of the delivered coal amounted to approximately 1,375,000 tons, costing \$4,381,000, notwithstanding that the general plan was to apply the specification method of purchase only to contracts of such size as to warrant sampling and analysis, and heating-value tests, and that the specification method was not rigidly applied to anthracite purchases because of the many samples of anthracite already collected and analyzed and the small area of the anthracite fields.

Most of the samples analyzed at the Washington laboratory represented coal purchased under specifications that provided for payment according to the quality of the delivered coal. Analyses of samples collected in mines were generally made in the bureau's laboratory at Pittsburgh. During the fiscal year ended June 30, 1913, 7,607 samples were analyzed at the Washington laboratory, compared with 11,300 in the previous year.

The analyses and tests of fuels at the experiment station in Pittsburgh are made to indicate the character of the coal and other mineral fuels belonging to the United States, and to show how these fuels may be best utilized.

In analyzing samples of coal and lignite and other mineral fuels at the Pittsburgh station, the procedure followed was essentially the same as that of the Washington laboratory, except that at Pittsburgh ultimate as well as proximate analyses were made. Through the efforts of the chemists in charge of the laboratories improved apparatus and methods were devised and adopted with a view to lessening the cost and increasing the accuracy of the work of analyzing samples.

During the fiscal year 1913 about 635 mine samples of coal and lignite, 475 samples of fuel oil, and 293 samples of natural gas were analyzed in the laboratory at Pittsburgh. Of the oil purchased for the Navy, some 21,000,000 gallons in all was purchased under specifications prepared by the bureau.

The tests of fuels at the Pittsburgh station included studies of the process of combustion in boiler furnaces, undertaken in order to ascertain what proportions furnaces should have for the complete and smokeless combustion of fuels that are usually considered smoky, a study of the practical value of instruments used in boiler rooms for indicating the efficiency of combustion, and investigation of an elec-

tric device for precipitating smoke and fumes from chimney gases. An investigative study was made of waste from a coal mine on Government property with a view to using this waste for generating power for the mine.

The fuel tests also included investigations of the various petroleum found throughout the United States with a view to determining their heating value, chemical composition, and the most economical methods for efficiently utilizing them as power producers, especially on board Government ships; and investigations of the heavier distillates of petroleum, as well as of kerosene and gasoline, in order to ascertain their relative efficiency in internal-combustion engines for use in naval vessels and for other purposes.

Related investigations concerned methods of mining and of preparing coal for market, and of boring for and transporting oil and natural gas, with a view to ascertaining how present wastes in mining, preparing, and transporting fuel may be most efficiently lessened.

During the year the bureau continued chemical and physical researches to determine the composition of the different varieties of coal, in order to ascertain how each coal could be burned most efficiently in a variety of Government power plants. Experiments were continued to ascertain the deterioration of coal during storage and the causes of spontaneous combustion of coal, with especial reference to fire risks in storing coal on board ships, in closed bins, or on wooden wharfs. The results obtained are mentioned in another part of this report.

* * * * *

REPORT OF THE COMMISSIONER OF INDIAN AFFAIRS.

DEPARTMENT OF THE INTERIOR,
OFFICE COMMISSIONER OF INDIAN AFFAIRS,
December 8, 1913.

SIR: I have the honor to transmit herewith the Eighty-second Annual Report of the Bureau of Indian Affairs, covering the period from July 1, 1912, to June 30, 1913.

GENERAL STATEMENT.

During the last fiscal year the Bureau of Indian Affairs was under the direction of Hon. R. G. Valentine, Commissioner of Indian Affairs, up to the time of his resignation, September 12, 1912. Thereafter, Hon. F. H. Abbott, Assistant Commissioner, was in charge as Acting Commissioner until June 4, 1913, on which date I took the oath of office as Commissioner of Indian Affairs.

Before giving a résumé of the activities of the Indian Bureau for the last fiscal year, I deem it appropriate to invite attention to a few of the larger questions which now confront this office for solution in the administration of the affairs of the Indians.

It may be interesting to note that the Indian country, under the jurisdiction of this office, covers an area almost as large as that of all the New England States and the State of New York combined.

There are about 6,000 employees in the Indian Service, who supervise the affairs of about 300,000 Indians, whose combined property is estimated to be worth nearly \$900,000,000.

There have been appropriated by Congress for the Indian Service and for fulfilling treaty stipulations with the various Indian tribes since the fiscal year 1881 the following amounts:

Appropriations since 1881.

1881 to 1890.....	\$53, 797, 649. 09
1891 to 1900.....	78, 883, 746. 47
1901 to 1910.....	93, 337, 617. 42
1911.....	10, 129, 357. 29
1912.....	8, 957, 199. 64
1913.....	9, 055, 614. 43
1914.....	9, 461, 819. 67
Total.....	263, 623, 004. 01

The Government is the guardian of this vast Indian estate. How this property shall be conserved for the benefit of the Indians and how they shall be taught to make the best possible use thereof so that they may ultimately take their rightful place as self-supporting citizens of the Republic are the great problems confronting this bureau.

A few of the administrative details yet to be worked out or completed may be mentioned as follows:

1. It is estimated that under the act of June 25, 1910 (36 Stat. L., 855) there are now pending at the various agencies throughout the Indian country, awaiting the determination of the heirs, about 40,000 heirship cases, which represent inherited lands valued at approximately \$60,000,000. There are pending in this office about 1,500 heirship cases on which final action has not been taken.

A large appropriation is needed in order to enable the office to bring this work up to date. When the heirs are determined the inherited lands will be available for sale and the proceeds can be used to improve the allotments of the heirs. Expediting the work of determining the heirs of deceased Indian allottees is one of the urgent necessities of the Indian Service.

2. The allotting of lands to individual Indians has been continued ever since the enactment of the general allotment act of February 8, 1887 (24 Stat. L., 388). It is estimated that there have been allotted to 180,000 Indians about 34,000,000 acres and there remain to be allotted about 39,000,000 acres. There are nearly 120,000 unallotted Indians. There has been expended for allotment work heretofore completed about \$4,500,000, and it is believed that it will require at least \$3,000,000 to complete the allotment work.

I find that there are a large number of the reservations which not only have not yet been allotted but which have not been surveyed. The earliest possible completion of the allotment work is desirable, as it is the main chance of perhaps 70 per cent of the Indians to become self-supporting, and this work is also preliminary to the opening of reservations. The settlement of white people in the Indian country will result in very materially increasing the value of the lands retained by the Indians as their allotments, for it will be the means of locating therein free schools, churches, good roads, and other agencies of a modern and progressive community.

3.-The timber holdings of the Indians have stumpage value of more than \$80,000,000. Approximately one-seventh of this value is in timber upon allotted lands. The greater part of the unallotted timber is upon nonagricultural lands in the Rocky Mountain and Pacific States. The timber cover on these tribal lands bears a very direct relation to the regulation of a water supply for lands both within and outside of Indian reservations. Even where it is not essential that the forest cover be maintained on tribal lands for water conservation purposes, it is frequently advisable that the forest be perpetuated as a source of fuel and lumber supply.

One of the difficult problems which confront the Indian Service is the administration of these timber lands so as to derive a sustained revenue adequate to provide for the needs of the Indians as agricultural development takes place within the Indian reservations and yet not affect unfavorably the future needs both as regard the timber and water supply. The solution of this problem will require sound business foresight, enlightened by the scientific principles which form the basis of the practice of both forestry and irrigation.

Practically nothing has yet been done in the line of valuation surveys and the preparation of working plans. The timber upon tribal lands in the Western States has heretofore been inaccessible, but railroads recently constructed or now projected will afford an outlet for a large amount of such timber. The valuable timber of the Indians should be made a very potent agency in promoting their progress.

4. Notwithstanding the fact that the Government has provided since 1876 approximately \$80,000,000 for schools among the Indians, there are to-day about 10,000 Indian children without any school facilities whatever, principally in the Southwest and more particularly among the Navajo and Papago Indians. There are also about 7,500 defective Indian children, either physically or mentally, for whom no adequate facilities are available for their care and training.

The present available appropriations for Indian schools provide for 223 Indian day schools situated on Indian reservations near the Indian homes, 76 boarding schools located on the reservations, and 35 boarding schools located off the reservations and known as non-reservation schools. Of the 65,000 Indian children of school age, these schools care for approximately 25,000. There are enrolled in mission and public schools 22,500 Indian children, leaving 17,500 normal and defective Indian children unprovided for. Efforts will be made to procure increased appropriations for Indian school work so that all Indian children may be provided with school facilities. All Government schools for Indians are largely industrial.

5. I find that the health conditions among the Indians are deplorable. Under the jurisdiction of this bureau there are approximately 25,000 Indians suffering from tuberculosis. Available Indian hospital facilities for all these patients, adults and children, will not exceed 300 beds. During the last fiscal year 1,905 Indians were reported as having died from tuberculosis. This is probably not more than 75 per cent of the total number of Indians who have died from this disease during the fiscal year. Of the whole number of deaths reported from the various Indian reservations, 32 per cent were due to pulmonary tuberculosis, as against 11.2 per cent due to the same disease occurring in the registration area of the United States. The

death rate among Indians is 32.24 per thousand, while the Census Bureau gives 16 per thousand in the registration area of the United States.

It is also estimated that there are more than 60,000 Indians in the United States who are suffering from trachoma. This eye disease is considered so serious as to cause the exclusion from this country of all immigrants who are thus afflicted. It will be remembered that the Indians are living among a very large white population, which is an added reason for taking every precaution to check and control this disease. Additional appropriations are needed to construct and equip hospitals to be located on Indian reservations and to check and control disease among Indians and to improve their health conditions generally.

6. The housing conditions of the Indians throughout the country is one of the important subjects which demand immediate consideration. It is estimated that there are approximately 8,000 Indian families without homes, who live in mud lodges, tepees, or wickiups—a large number of them on dirt floors and under the most revolting, insanitary conditions. There are thousands of other Indian families who live in one and two room shacks or cabins, under sanitary conditions that must of necessity cause the propagation and transmission of the most dangerous diseases, such as tuberculosis and trachoma.

Notwithstanding the fact that a large number of the Indians have been allotted valuable lands, ranging from 80 to 320 acres to each Indian, these deplorable housing conditions continue to exist. An Indian family owning from 400 to 1,000 acres of valuable land certainly should not be permitted much longer to live under sanitary conditions that are a serious reflection on Indian administration.

The Indians own tribal and individual timber valued at more than \$80,000,000, and as the Government has provided a large number of sawmills located on different reservations throughout the Indian country, it is my purpose to enter into a vigorous campaign to improve the housing conditions of Indians wherever practicable.

7. The Indian water-right situation on a large number of reservations is such as to demand most serious consideration. Unfortunately, legislation has been enacted by Congress which makes beneficial use of water on Indian lands within certain reservations necessary, if the water rights are to be held by the Indians. Congress has provided appropriations for constructing expensive irrigation projects on several reservations, reimbursable out of Indian funds, and the Indians are required to make beneficial use of the water on said reservations within a limited time. If this is not done they will be in danger of losing their water rights and forfeiting the same to subsequent appropriators of the water. On a large number of the reservations agricultural lands are practically valueless without water. The Government holds the allotted lands in trust for the benefit of Indians for a period of 25 years, because of the fact that they are deemed incompetent to protect their property rights. It seems equally important to conserve the water rights of the Indians, at the same time encouraging them to make beneficial use of the water by farming their allotments. In this connection it should be remembered that the Indians, in a large number of cases, live far removed from railroad facilities, that they are handicapped by lack of adequate live stock and farming implements, and that they are living and working under conditions

which would discourage even the most progressive white farmers who are well trained and accustomed to hard work on their farms. Legislation will probably be necessary in a number of cases to protect fully the water rights of the Indians.

I find also that Indian tribal funds have been used in construction and maintenance of irrigation projects, and that only a certain portion of the Indians have received any benefit from the irrigation systems. This is a question that will necessarily have to be worked out with great care, in order that the Indians who receive the benefits from irrigation projects shall be required to pay the cost of the same.

It is proposed to give the question of water rights of Indians very thorough and careful consideration, with the hope of fully protecting the rights of the wards of the Government.

8. I find the work of this bureau is very materially in arrears and that it is practically impossible with the present force to bring the work of the office up to date and keep it current.

The employees of this office, as a rule, are diligent, intelligent, and faithful. The records show that they did 1,522 days voluntary overtime during the last fiscal year in an effort to keep the work of the bureau as nearly current as possible.

Because of the breaking up of tribal relations and the making of individual allotments, the necessary work of the Indian Office has been very much increased during recent years without a corresponding increase in the number of employees. For example, the increase of work for 1913 over 1899 was 361.34 per cent, while the increase in employees in the Indian Office for 1913 over 1899 was only 134.65 per cent. The number of letters received in the Indian Office during the year 1899 was only 59,707, while the number of letters received during the fiscal year 1913 was 275,452. This was an increase of 23.97 per cent over the preceding year.

It is apparent that the policy of individualizing Indian property and the removing of restrictions from the Indian as fast as he demonstrates competency, together with the proper protection of incompetents and minors, will greatly increase the work of this office for several years, and that the faster these things are accomplished the greater will be the office force required to handle allotments, sales of tribal property and allotted timber and agricultural lands, the determining of heirs, the granting of patents in fee, the handling of segregated trust funds, and the numerous other duties devolving upon this office.

I wish to emphasize the fact that the work of the Indian Bureau, handling a trust estate valued at approximately \$900,000,000 belonging to 300,000 wards of the Government, should not be crippled further because of the failure to procure an additional appropriation of approximately \$50,000 for employees whose services are absolutely necessary to keep the work of this bureau current. I shall include in the estimates for employees for this bureau a request for the additional help absolutely required.

9. The conditions existing in eastern Oklahoma among the Five Civilized Tribes in connection with the probating and handling of the estates of minor Indians in the local State courts are such as to require prompt consideration. I consider it very important that an appropriation of at least \$75,000 be procured in the next Indian appropriation act, so as to enable this office to employ probate attor-

neys to look after the interests of minor Indians in the Five Civilized Tribes, and to meet properly the probate situation now existing in eastern Oklahoma.

If proper action is not promptly taken, it is only a question of time until a very large number of the Indians in eastern Oklahoma will be deprived of their property, with the result that they will become charges on the local community.

10. There is undoubtedly a larger field for the improvement of existing industrial conditions of the Indians than any other activity of the Indian Service.

I find that the Indians have more than 600,000 acres of irrigable land, approximately 9,000,000 acres of other agricultural lands, more than 50,000,000 acres of grazing lands, and that the Government has expended approximately \$10,000,000 in connection with Indian irrigation projects.

Many able-bodied Indians who have valuable lands are wholly or partially without seeds, teams, implements, and other equipment to utilize properly such lands. This is particularly true in several reservations where large sums of public or tribal funds have been used in constructing irrigation systems, and is in part the reason why such large areas of irrigable and other agricultural lands are not under cultivation.

The valuable grazing lands of the Indians offer unusual opportunities for increasing the meat supply of the country, at the same time furnishing a profitable employment for the Indians as well as utilizing their valuable grazing lands. During the last year the Indians cultivated less than 600,000 acres of their vast area of agricultural lands.

It shall be my purpose to attempt to procure reimbursable appropriations so as to advance to the Indians needed agricultural equipment in order that they may make beneficial use of their resources and become self-supporting and progressive citizens. These reimbursable appropriations, if procured and properly used, will result in ultimately decreasing the gratuity appropriations for Indians.

I find that there is need for additional legislation by Congress to meet the problems arising, such as legislation authorizing the mining on Executive-order reservations, legislation segregating tribal and trust funds in the United States Treasury, legislation authorizing the submission of claims of Indian tribes to the Court of Claims, and other additional legislation which will be prepared and ready for submission to the Congress at its regular session in December.

The foregoing are a few of the many important problems confronting this bureau. The following contains a résumé of the work of the bureau during the fiscal year ended June 30, 1913:

AGRICULTURAL WORK.

Agriculture has been given the first place in this report because it has received greater emphasis than any other activity of the Indian Bureau during the last fiscal year. The results of the stress placed upon this subject are shown in a general awakening to the recognition of agriculture and stockraising as the main road for the Indians' advancement toward civilization.

Realizing that each Indian is a problem, and the only hope of success is to go to each one and see what he has, what he needs, and

show him how to make the best use of his resources, special efforts have been made during the year to bring the workers in the Indian Service into closer touch with the Indian's life and his everyday problems.

Reservations, in the sense in which they were formerly known, are gradually disappearing, and the Indians are taking their places on homesteads and allotments, and are finding themselves face to face with the all-important and serious problem of gaining a livelihood for themselves and families, some from the soil and others from live stock.

The reservations are now largely divided into farm or stock districts, and a farmer or stockman is stationed in each. Approximately 249 farmers and 13 assistants were employed at the various reservations during the year. They make their homes, to a large extent, in such districts, thereby keeping in the closest possible touch with the activities of the individual Indians, and advising and directing them in their operations.

Books dealing with various industrial topics have been purchased and sent to a number of schools for the use of the school and reservation employees.

Experimentation in agriculture is being carried on at Pima, San Juan, Shoshone, Pala, Colville, Kaibab, San Xavier, Shivwits, and Leupp, while efforts are being made to utilize all the reservation Indian school farms to demonstrate to the older Indians the possibilities of the soil, at the same time producing the maximum income to be used in the support of the school plant.

STOCK RAISING.

In addition to the farmers, 37 stockmen were employed to give special attention to this important industry. The plan, begun about a year ago, of rounding up and disposing of worthless pony stallions and other breeding stock was continued during the year. Stallions of the draft type and a good grade of bulls, cows, and heifers were purchased for a number of reservations.

Good results are being accomplished by breeding the pony mares with stallions of the draft type weighing 1,400 to 1,600 pounds. One of the greatest difficulties to be met in encouraging the Indians to farm more of their lands is the poor condition of their stock. The introduction of the larger stallions among their herds is gradually overcoming this obstacle, and the Indians are cooperating in the plan of upbreeding their stock.

COOPERATION OF THE DEPARTMENT OF AGRICULTURE AND OTHERS.

The Department of Agriculture and its various bureaus and also a number of the State authorities have continued to give our service much valuable advice and aid in the inspection of livestock, eradication of diseases of animals and plants, the protection of orchards, the improvement of seeds, and the promotion of improved farming methods.

The Bureau of Plant Industry has sent to Government farmers as well as to Indian farmers, bulletins on various phases of agricultural industry, and pamphlets on home topics for the women. Drought-

resisting seeds were sent to Indian schools in arid and semiarid sections of the country, and a supply was also sent to 1,000 progressive Indians.

The Bureau of Entomology cooperated in the work of eradicating grasshoppers and potato bugs, and in the inspection of orchards on several reservations. Local State authorities also gave advice and aid in this work.

The Bureau of Animal Industry has been very generous in furnishing experts to assist in the purchase and inspection of breeding stock bought for the Indians, and in the eradication of dourine, glanders, mange, ticks, and other diseases of live stock.

The dairy being an important adjunct of practically all the Indian schools, the Bureau of Animal Industry has continued its work of sending experts to the schools for the purpose of making tuberculin tests of the dairy herds and inspecting methods of dairying.

The farmers among the Five Civilized Tribes continued their cooperative work with the various organizations in the State, both national and local. The business men, railway companies, and commercial clubs of eastern Oklahoma are all aiding Indian Service farmers in the campaign for general improvement among the Indians of this section.

REIMBURSABLE FUNDS FOR PROMOTING AGRICULTURE.

The office has during the year continued to utilize tribal funds and funds appropriated by Congress as revolving, reimbursable funds to purchase needed live stock and farming equipment for those Indians who have neither the cash nor the credit to purchase the equipment necessary to make their lands productive. These funds are repaid by the Indians in accordance with the terms of definite written agreements.

Appropriations for the purchase of agricultural implements, wagons, and other supplies and live stock to be sold to the Indians under the reimbursable plan are being used at the following reservations: Fort Belknap, Tongue River, Flathead, Pueblo (Albuquerque, Santa Fe), Fort Mojave, Martinez, Pala, Pechanga, Soboba, San Xavier, Walker River, Shawnee, Malki, Fort McDermitt, and Salt River.

The practice heretofore in vogue of issuing implements, wagons, harness, stock, etc., to Indians in return for labor is being gradually discontinued on several reservations, the Indians being given the privilege either of paying cash for what they get, or in the case of seed, returning to the superintendent an equal value in kind. This seed is then stored at the agency and the next year it is reissued upon the same conditions to other Indians who need assistance of this character.

While the precise number of Indians benefited through these reimbursable appropriations and funds can not be stated in exact numbers, the number runs well up into the hundreds, and superintendents are unanimous in their testimony as to the good which has been accomplished. The money has been expended for the benefit of able-bodied Indians in amounts not exceeding \$600, under regulations approved by the department on November 4, 1911, which provide for the proper use and repayment of the money. The Indians for the most part are meeting their payments when due and with surprising promptness.

AGRICULTURAL FAIRS AND ASSOCIATIONS.

Fairs were held at Crow, Crow Creek, Fort Belknap, Fort Peck, Fort Totten, Lower Brulé, Nevada, Pima, Pine Ridge, Pala, Rosebud, Standing Rock, San Carlos, Soboba, Sac and Fox, Iowa, Santee, Sisseton, San Juan, Tongue River, Cheyenne River, and Uintah and Ouray in the fall of 1912. A joint fair for the four Cheyenne and Arapaho superintendencies in Oklahoma was held, and about 2,500 Indians visited the fair, where one of the special features was a health exhibit, with posters giving sanitary maxims, diagrams, etc.

The Indians at Camp Verde, Fallon, Fort Lapwai, Western Navajo, Kiowa, Malki, Oneida, Pawnee, Rapid City, Red Lake, Sac and Fox, Iowa, Salt River, Siletz, San Xavier, Union, Uintah and Ouray, and White Earth had exhibits at the county and State fairs.

Farmers' clubs have been organized at Malki, Sisseton, Union, Fond du Lac, Oto, Potawatomi, Ponca, Standing Rock, Tongue River, Winnebago, and Yankton. A boys' corn club was started at Red Moon. An industrial workers' association was organized at Red Cliff. Farmers' institutes for the discussion of agricultural and other topics of interest to the Indians were held at a number of places, principally at Potawatomi, Union, and Sisseton.

Many of the fairs are self-supporting, and a very gratifying feature has been the increased number of Indians taking part in county and State fairs.

FARMING AND GRAZING LEASES.

Under the act of Congress, dated June 25, 1910 (36 Stat. L., 855), the allottees of lands held under trust patents are authorized to lease their allotments for a period not to exceed five years, under regulations prescribed by the department. Under these regulations allottees at various agencies have been classified as competent and non-competent, the competent Indians being permitted to transact the business incidental to making their own leases and collecting their own rentals. In the case of incompetent Indians, leases of lands are negotiated in the agency office and the rentals paid through the superintendent. All leases made by Indians classified as competent are subject only to the approval of the superintendent. During the past year the privilege of negotiating their own leases was given to 1,198 Indians.

LEASING ON THE UINTAH AND OURAY RESERVATION.

Under the laws of the State of Utah, in order to preserve the water rights, beneficial use must be made before the summer of 1919 of water to irrigate 78,000 acres of excellent agricultural land now under ditch on the Uintah and Ouray Reservation. In order to reclaim as much as possible of this land before the expiration of this time limit, a vigorous advertising campaign has been inaugurated offering to lessees very favorable terms for leasing land within the next two years. In some cases it is only required that the lessee clear the land of sage brush, level it, and leave buildings on the leased premises to the value of about \$500 at the expiration of the lease.

LEASING ON THE WIND RIVER RESERVATION.

Lands on the Shoshone Indian Reservation have been advertised for lease and sale on very liberal terms. The immediate reclamation

of irrigable lands on this reservation was necessary not only to provide income for the Indians, but chiefly to comply with the State law requiring beneficial use of the water before the year 1916. Thirty-two tracts out of over 87 advertised during the last fiscal year were sold. The total irrigable area on this reservation to be reclaimed is 65,674 acres, 35,000 acres of which are already subject to irrigation, \$607,637 of Indian money having been expended on this project.

GRAZING ON TRIBAL LANDS.

During the fiscal year ended June 30, 1913, there was received for grazing privileges on tribal lands (exclusive of ceded lands) approximately \$435,000.

GRAZING ON OPEN LANDS.

One of the most important developments in the leasing policy during the last fiscal year was a decision of the department permitting the leasing of so-called ceded Indian lands, which theretofore had been grazed free of charge by stockmen. Regulations governing the use for grazing purposes of these vacant Indian lands turned over to the Government to be sold, promulgated on July 25, 1912, have been put into operation on seven reservations. During the year permits to use such lands for grazing have been issued, rentals therefrom aggregating about \$75,000.

ROAD BUILDING.

A systematic plan of road building and improvement is being gradually worked out under which each able-bodied Indian is required to donate a certain number of days' labor each year. At Shoshone Reservation a very comprehensive system of roads has been planned, which is a part of the national system of highways. At San Carlos, in Arizona, much road work has been done, and a new bridge has been constructed across the Black River, which divides the San Carlos from the Fort Apache Reservation. This road and bridge will enable the Fort Apache superintendency to receive its supplies from the south over a distance which is considerably less than that from the present railroad station to the north.

SUPPRESSION OF THE LIQUOR TRAFFIC.

The use of intoxicating liquor is an insurmountable bar between the Indian and progress. Education, health campaigns, appropriations to encourage industry, all fail so long as he uses intoxicants. Realizing this, the bureau has continued during the year with vigor the campaign against illegal sales of intoxicating liquor to Indians and its introduction into what is termed the "Indian country."

GENERAL OPERATIONS.

While special emphasis was laid upon the separation of Indians from whisky and not the multiplication of individual cases, there was a total of 1,054 cases instituted, and convictions were secured in 553 cases, while 114 were dismissed.

As three-fourths of the Indians in Minnesota are citizens, the Federal officers have curtailed their operations in that State, as the sale of liquor to them must be prosecuted under the State laws.

Operations in New Mexico, among the Pueblos, were restricted by the decision of the United States district court in the case of *United States v. Sandoval* (198 Fed. Rep., 539), which held that the portion of enabling act declaring the lands of the Pueblo Indians to be Indian country was unconstitutional. This case is now before the Supreme Court of the United States.

An important decision affecting the use of tulapai or tiswin was handed down during the year. The Indians of the Southwest brew this beverage, which is a fermented product made from corn and various roots. Recently the superintendent of the Salt River Reservation instituted proceedings and obtained a conviction against an Indian who had supplied other Indians with tiswin, on the charge of furnishing intoxicating liquor to Indians in violation of the provisions of the act of January 30, 1897.

An active campaign against the liquor traffic among Indians is being waged in Oklahoma. In that State during the year 179 arrests were made, 52 convictions secured, and 24,865 pints of liquor seized and destroyed. Every step has been contested in the courts, resulting in two Supreme Court decisions, three decisions of the circuit court of appeals, and six decisions of the district courts, besides the various cases taken into the State courts. One-third of the Indian population of the United States resides within the State of Oklahoma, which, owing to the great agricultural and mineral wealth of this Indian population, offers an attractive field for the bootlegger.

On September 19, 1912, Deputy Special Officer R. L. Bowman was killed, and Posseman W. R. Mayfield was wounded while in the performance of duty. Considerable liquor was being introduced into Oklahoma from Kansas, and, upon receiving information that a shipment was being made, these officers set out to intercept, seize and destroy it after it crossed the State line. The drivers were arrested, searched, and three loaded revolvers taken from them. Two loads of liquor had been destroyed and the greater part of the third, when Officer Mayfield went over to the fourth and commenced destroying its contents. An automobile came from the direction of the Kansas line at a rapid rate of speed, set the emergency brakes directly opposite the wagon upon which Mr. Bowman was standing, and one of the occupants opened fire with a shotgun. Mr. Bowman was killed, Officer Mayfield received three slight wounds, and an onlooker was shot in the right breast. The State authorities of Kansas and Oklahoma were asked to take immediate action, and the United States attorney at Muskogee immediately brought action against these parties. Two of them have been found guilty in the Federal court on the charge of conspiracy to deprive an officer of the rights guaranteed him by the Constitution.

DIFFICULTIES OF THE LIQUOR SERVICE.

The officers engaged in the work of suppressing the liquor traffic among the Indians are called upon to face situations which require the special exercise of tact and judgment; they must handle the bootlegger on the one side, and the Indian and the witnesses on the other; they must conduct their operations so as to get results and yet endeavor not unnecessarily to antagonize the best men of the local

community or create a sentiment against their work. The Oklahoma situation is a striking example of the risks that the officers must take, and it is therefore essential that these men should be encouraged and afforded every possible personal safeguard. Congress (37 Stat. L., 519) extended to these officers the powers conferred by section 788 of the Revised Statutes upon marshals and their deputies. This also applies to all persons working under the supervision of the chief special officer "whose appointments are made or affirmed by the Commissioner of Indian Affairs or the Secretary of the Interior."

USE OF LIQUOR AMONG EMPLOYEES.

It has been found in some instances that white employees of the Indian Service have introduced liquor upon reservations under physicians' prescriptions, and although possibly none of this liquor found its way to Indians it was a direct violation of the law and guilty persons have been prosecuted. To stop absolutely this practice an order was issued to employees strictly forbidding the use by them of intoxicants even under physicians' prescriptions, and regulations were issued, after securing permission from the War Department, to govern Indian Service physicians in the use of ethyl alcohol for medicinal and scientific purposes among the Indians and employees of the Government.

WINES FOR SACRAMENTAL PURPOSES.

In order to overcome a hardship affecting the various churches on the reservations, Congress (37 Stat. L., 519) has provided that wines used solely for sacramental purposes under church authority could be introduced at any place within the Indian country, or any Indian reservation, including the Pueblo reservations in New Mexico.

DENVER CONFERENCE.

On December 30 and 31, 1912, and January 1, 1913, a conference of all the special officers and a representative of the office was held at Denver for the purpose of arriving at a better understanding as to the needs of the service and the manner of operating and conducting the work. The conference was a profitable one, resulting in a better understanding of the work and a closer cooperation of the officers of this special service and other field employees of this bureau.

PEYOTE.

Very careful consideration is being given to the question of the use of peyote. Much information has been submitted both by Indians who were members of so-called mescal organizations and who have pressed their petitions for permission to use it, and by missionaries, physicians in the Government service, and others interested in both sides of the question. The bureau has taken a firm stand against the introduction and use of peyote in the Indian country, and directed its liquor officers to obtain evidence of the use of this drug with a view to prosecution, on the ground that the data in the files of the bureau fully warrant the classification of peyote as an intoxicant. A full discussion of peyote was incorporated in the annual report of the Commissioner of Indian Affairs for 1911.

FORESTRY.

The systematic attempt to ascertain the amount and value of the timber on Indian lands, begun in 1910, has been continued. When consideration is given to the extent of the areas embraced, to the undeveloped condition of these areas, and to the very large part of these lands still unsurveyed, the magnitude of the undertaking will be readily appreciated. The timber growth varies from the scrubby mesquite and pinon on the arid plateaus of Arizona and New Mexico to the giant redwood of the Hoopa Valley region in California, and from the scattered red cedar and cottonwood of the subhumid plains and their water courses to the dense virgin stands of spruce, fir, and cedar in the Puget Sound region.

The best information available places the total amount of timber on both tribal lands and allotments at approximately 40,000,000,000 feet, with a value of about \$84,000,000.

The building of telephone lines, roads, and trails for the protection of timber has been continued, and the advantage of such means of communication has been demonstrated. A total of the forest and prairie fires reported from all reservations during the calendar year ended December 31, 1912, showed that the great majority were extinguished before any great damage was done. Approximately 900,000 feet of timber were injured, about 50,000 acres were burned over, and the total damage done by all fires was estimated at only \$10,000. A large part of this is estimated damage to forage and young growth.

Logging operations on the Bad River, Lac du Flambeau, Lac Courte Oreille, and Fond du Lac Reservations have been continued by the regular contractors. The total amount cut on each of these reservations was as follows: Bad River, 57,183,770 feet; Lac du Flambeau, 23,049,110; Lac Courte Oreille, 4,268,050 feet; Fond du Lac, 13,128,775 feet. All of this timber was cut on allotments except 12,068,620 feet cut from unpatented lands of the Lac du Flambeau Reservation, claimed by the State of Wisconsin as swamp lands, and 56,955 feet cut from tribal lands of the Bad River Reservation.

In the summer of 1910 the pine timber on the Red Lake Indian Reservation was injured by fire. An attempt to dispose of this timber in 1911 at minimum prices of \$8 for white pine and \$6 for Norway was unsuccessful. The timber was considerably damaged by standing after burning. In the autumn of 1912 it was again advertised at a lower price. During the logging season of 1912-13 there were removed 9,411,920 feet of white pine and 4,426,620 feet of Norway, for which \$71,167.80 has been received. About 1,000,000 feet still remain upon one of these tracts. This will be cut during the season of 1913-14.

Timber on allotments under the Red Cliff Indian Reservation was advertised for sale during the fiscal year 1913, but no bids were received.

On December 17, 1912, the department approved the recommendation of this office that all existing contracts between Mr. A. V. Johnson and allottees of the Grand Portage Reservation be canceled, and that no further contracts be made under the authority granted to Mr. Johnson on November 4, 1907. Very many of the original allottees

of Grand Portage are deceased, and the heirs have not been determined in most instances. As soon as such determinations are made an attempt can be made to dispose of the remaining timber.

About 20,000,000 feet of timber standing on allotments under the jurisdiction of the superintendent of the Leech Lake Indian School were sold under sealed bids opened on March 28, 1912.

The tie industry on the Jicarilla Reservation has been continued with success; but the destruction by fire of the agency sawmill on May 30, 1913, interrupted the work, which had just begun to show results. Steps toward the rebuilding of the mill were taken immediately. No timber was cut on this reservation during the year under the contract with the Navajo Lumber & Supply Co. for 130,000,000 feet, consummated in 1912.

Sales of 1,500,000 feet, at \$3.25 per thousand, and 10,000,000 feet, at \$3.51 per thousand, were made from tribal lands of the Klamath Indian Reservation.

The 16 sections of pine lands in the Choctaw Nation segregated under authority of section 7 of the act of April 26, 1906 (34 Stat. L., 137), were offered for sale for cash, as required by the act, at four different times, and wide notice was given in each offering. The only bids received were rejected as not representing the value of land and timber. Realizing the impracticability of selling this land and timber for its market value at a cash sale, upon recommendation of the department, legislation was enacted as a part of the Indian appropriation act for 1913, which provided for sale under deferred payments. On August 30, 1912, the timber and land were reoffered on terms of a payment of 25 per cent of the purchase price within 60 days from acceptance of bid, 25 per cent additional within 12 months, and the remainder within two years, all deferred payments to draw interest at 6 per cent per annum from the time of the acceptance of the bid. There was a ready response to the more liberal terms of this advertisement, and after brisk bidding at public auction the land and timber were sold for \$287,000. These timber lands had been appraised by several different parties. The price received was more than \$40,000 above the highest appraisal ever placed upon them and \$120,000 above the highest offer received under any one of the earlier offerings.

MENOMINEE INDIAN MILLS.

The Menominee Indian mill, at Neopit, Wis., established in the spring of 1908, by the act of March 28, 1908 (35 Stat. L., 51), to manufacture into lumber the timber on the Menominee Indian Reservation, reports progress. The town of Neopit numbers over 900 people, composed largely of white and Indian laborers in the lumber industry, and contains churches, schools, stores, a music hall, and hotel. The mill has a capacity of 150,000 feet of lumber daily, beside lath, shingles, crating, and other miscellaneous products. The project owns and operates its own logging railway, about 35 miles in total length. The planing mill has recently been enlarged to double its former capacity, a new engine and new machines for finishing lumber having been installed within the last year. The total investment in the plant is over \$1,000,000.

The timber on the reservation consists of about 1,750,000,000 feet of pine, hemlock, and hardwoods, of which approximately 40,000,000

feet are cut annually, a basis which is calculated to insure a perpetual source of income for the Indians employed. In and about the mills, yards, camps, and railway are many Indians, some in skilled positions—the greater part in unskilled—all learning the value of daily employment and making social and economic progress. During the fiscal year just passed, an average of 322 Indians have been employed at an average wage of \$29.70 per month. Of this number, 271 were Menominees, an increase of 23 per cent over the number of Menominee Indians employed during the previous fiscal year. The able-bodied males of 18 years of age and over of the Menominee tribe number 408.

The deputy supervisor of forests who was recently assigned to this project has experimented in the renewal of forests by reforesting burned-over districts and establishing a nursery. Forest damage on this reservation has been reduced to a minimum through careful patrol of the forest and the installation of a telephone system and the erection of lookout towers.

IRRIGATION.

At the beginning of the fiscal year 1913 the office of the chief engineer was removed from Los Angeles, Cal., to Washington, D. C. The irrigation force consists of the chief inspector of irrigation, an assistant inspector of irrigation, who reports directly to the chief engineer, and six superintendents of irrigation at the head of as many districts, whose offices are convenient to the principal irrigation projects now under construction.

The legal right to the use of water is of primary importance in the work of the irrigation branch of the Indian Service. The water right for Indian lands rests upon common-law riparian rights in some cases, and in others it would appear that beneficial use of water must be made before title can be acquired. The United States Supreme Court has decided in the case of *Winters v. The United States* (207 U. S., 564) that prior appropriation by the United States and beneficial use by the Indians is not necessary, because of an implied reservation of water with and at the time of the reservation of the land sufficient for the irrigation thereof. However, the land in question had not been allotted, and the case did not involve the rights of any individual Indian but settled the right of the United States on behalf of unallotted Indians.

There is urgent necessity for looking thoroughly into all conditions pertaining to water rights on the various reservations and to protect the Indians against the loss of such rights.

There is at present no general method of procuring reimbursement for maintenance and operation expenses of the irrigation systems on the various reservations. On a majority of the reservations no provision is made for the reimbursement of this expense. Conditions on many reservations at the present time are such that it is not advisable to require that individuals pay the maintenance and operation expenses; but the time is not far distant when this method must change, and the owners benefited must bear this expense rather than allow it to be borne by the entire tribe or by the Government.

The total sum of \$624,066.54 was expended during the year in the irrigation by the Indian Service of Indian lands, of which the follow-

ing amounts were expended on nine of the largest projects: Yakima, \$65,476.02; Fort Hall, \$26,146.80; Uintah, \$35,031.06; Fort Belknap, \$20,313.58; Wind River, \$31,236.65; Colorado River, \$34,561.33; Fort Mojave, \$34,978.47; Navajo and Moqui, \$83,943.64, and Ganado, \$13,420.86.

HEALTH.

In accordance with directions contained in the Indian appropriation act approved August 24, 1912 (37 Stat. L., 519), the Surgeon General of the Public Health Service detailed 13 officers of that service to make an investigation as to the prevalence of tuberculosis, trachoma, smallpox, and other contagious and infectious diseases among the Indians of the United States, assigning each to a separate school or reservation. This investigation began September 28, 1912, and was concluded December 30, 1912, covering the tribes of Indians in 25 States and involving the personal inspection of 39,231 Indians. Senate Document No. 1038, Sixty-second Congress, contains a complete report of the investigation as transmitted to Congress by the Secretary of the Treasury.

Comparative studies plainly show that the prevalence of tuberculosis among Indians is greatly in excess of that among the white race, and the prevention of the ravages of this disease is the most important medical problem of the bureau.

Repeated examinations with the Von Pirquet tuberculosis test have demonstrated that on many reservations tuberculosis infection exists in as many as 90 per cent of the school children, and while this of course does not mean active cases, it does indicate the excessive incidence of the disease, much of which under favorable conditions may at some time become active. On account of the high incidence of tuberculosis in pupils of Indian schools the matter of health is one of paramount importance.

The service sanatoria at Fort Lapwai, Idaho, Phoenix, Ariz., and Laguna, N. Mex., have each completed a successful year. Their success has stimulated the office to add to their number, and accordingly there has been established at Toledo, Iowa, an additional sanatorium with a capacity of 65 patients, which by reason of its location will be admirably adapted for the treatment of children with incipient tuberculosis from the northernmost reservations. Besides offering them the advantages of sanatorium treatment, it will give them the benefit of a change of climate without taking them too far from home. As at the other sanatoria, a school will be provided for children able to take advantage of it.

The force of ophthalmologists has been increased to six, each of whom has been assigned to a separate district in which he will have supervision of the eye work, it being the plan to have a qualified operator within reach of each agency physician. These surgeons will be important factors in controlling the spread of trachoma.

Trachoma with an incidence approaching 70 per cent was reported among the Five Civilized Tribes, presenting such an alarming situation that an assistant medical supervisor was directed, during the fiscal year 1913, to make a survey of the whole Five Tribes country with a view of determining the medical and sanitary needs of the Indians.

During the year epidemics of certain of the more common infectious diseases occurred on many reservations—diphtheria, smallpox, scarlet fever, and measles occurring most frequently. Diphtheria visited seven reservations during the year, with but one death in 54 cases. This unusually low death rate is due to the close observation under which the school children are kept by the physicians, the immediate use of diphtheria antitoxin, and the mild form in which the disease appeared.

Smallpox occurred in a mild form excepting in the Five Tribes, where it appeared in a most virulent type. Indians generally submitted cheerfully to vaccination by and followed the instructions of service physicians.

Typhoid fever, a disease formerly so rare among Indians that many service physicians believed that there existed a racial immunity, is occurring with greater frequency, due in all probability to the closer contact of the Indians with the white race. Sufficient cases have already occurred and these have been so widely distributed among the tribes that it can be safely said that the Indian is not naturally immune to this disease.

By especially prepared lectures illustrated by stereopticon slides and motion pictures, delivered to Indians on the reservations during the past few years, appeal has been made direct to them to improve their living conditions, and they have been taught by this means how to guard against disease. These lectures have been well attended, and their influence for good has been great.

INDIAN SCHOOLS.

There were maintained 217 Indian day schools situated on the reservations near the Indian homes, for pupils from the first to the fifth grades. The boys were also instructed in gardening and elementary carpentry and the girls in sewing and housekeeping. A noon-day lunch is served at many of these schools.

The typical Indian day school consists of a school building with a capacity of 25 to 40 pupils, a room for the serving of the noonday lunch, or for industrial training, and quarters for the employees, who are usually a teacher and his wife, the latter acting as housekeeper. There is always a garden at each school and frequently from 40 to 160 acres of land, which is used for grazing purposes.

Seventy-six reservation boarding schools were maintained. They enrolled pupils for the entire year in grades from the first to the seventh, inclusive. These schools are better equipped than the day schools to give training along industrial lines to both the boys and the girls. The pupils are housed, clothed, and fed and allowed to return to their parents during the summer vacation. Ordinarily these schools have a capacity of from 75 to 400 pupils, the plant consisting of school buildings with classrooms and assembly halls, dormitories for girls and boys, and such accessory buildings as laundry, warehouse, shop buildings, and employees' quarters.

There were 35 nonreservation boarding schools, situated off the reservations, some of them at a considerable distance from Indian communities. Pupils are brought to these schools at Government expense for periods of 3 to 5 years. These schools have more

buildings and are usually better equipped than the reservation schools. There are several dormitories, large shops, increased facilities for the housing of employees, domestic science cottages, and also buildings for the electric power and heating plants. Their capacities range from 75 to 750 pupils. Nonreservation schools represent the highest class maintained for Indian pupils and furnish academic training through the eighth grade, a few doing work comparable with that given in the first year of public high schools.

Indian children were also enrolled in 45 public schools in which a tuition was paid and in several hundred public schools in which no tuition was paid, not including the 325 public schools in eastern Oklahoma among the Five Civilized Tribes where the schools are in Indian communities but under the control of the State. Sixteen mission schools under contract and 53 not under contract enrolled Indian pupils. There is no record of the number of Indians enrolled in private schools.

VOCATIONAL TRAINING.

For all pupils in and above the third grade industrial training occupies at least one-half their time. Superintendents are giving careful attention to the selection of the kind of training taken up by the different pupils. If a boy has an allotment, he is advised not to take a regular trade course, but to take such training in carpentry, simple blacksmithing, etc., as would be of value to a farmer, for it is expected that he will return to his allotment. If a boy has no land, then he is encouraged to take up one of the trades.

The vocational training for boys includes carpentry, blacksmithing, masonry, harness making, tailoring, plumbing, tinning, steam and electrical engineering, printing, and agriculture, and for girls household economy.

Many Indian pupils are the possessors of considerable land, and the boys, unless they have no land, are taught the wholesomeness and value of agricultural pursuits. Each girl is given the actual care of a group of rooms comparable with what she might have in her own home and taught how to care for them; she prepares and serves meals, preserves foods, and cares for poultry; also the proper care of the household from a sanitary point of view is taught.

ACADEMIC TRAINING.

Pupils are given such training as will enable them to acquire a ready use of conversational English. Many pupils come from Indian homes in which no English is spoken, and great care must be given to the first year's training in English. A satisfactory standard of acquirements has been set in many schools where pupils of this kind have learned to use, actually, at least 280 English words in one year. Two new words can be mastered each school day during the first two years by the average Indian pupil. This is the time when he can acquire more readily than at any other a knowledge of a new language; and every effort is being made to develop the pupils during this period.

Better textbooks and supplemental reading matter, more blackboards for the classrooms, and primary equipment suitable for use in the primary grades have been in use. To prevent the spread of

any contagious diseases from the handling of books, superintendents have been directed to reissue no soiled book or any book which has ever been in the hands of a pupil who might have such a disease. The courses of instruction followed in most Indian schools have conformed quite closely to those used in the public schools of the State in which the school is situated.

VISUAL INSTRUCTION.

One feature of the work which bears upon every phase of Indian education is that of visual instruction. Stereopticons are now in use at most of the schools and careful attention was given to the selection of a complete list of topics suitable for use in the instruction of pupils in geography, history, industrial activities, manufacturing processes in connection with the production of machinery, etc. A series of lectures along moral lines was given by Dr. Milton Fairchild in a number of schools, his talks being illustrated by selected pictures.

This plan was used particularly in connection with the study of "Home building," which was the subject of essays written by the pupils of those schools maintaining grades above the second. The improvement of home conditions among Indians is of vital importance to the future health, happiness and usefulness of the Indian. About 700 prizes were awarded to those pupils preparing the best essay on the subject of "Home building." The results obtained were excellent. The Indian children took great interest in the study and no doubt gained a large fund of practical and useful knowledge relative thereto. Many pupils prepared creditable house plans, wrote descriptions of their ideal houses and their equipment, and drew word pictures of their ideal future homes.

PHYSICAL TRAINING.

Outdoor life being essential to the health of Indian pupils, playgrounds are available at all schools; and where homemade apparatus has not been provided, the office has authorized the purchase of ample equipment for both boys and girls. Baseball, basket ball, and other forms of athletics are enjoyed at all the larger schools. The boys are organized into military companies, and in order to effect a uniform system of drilling a pamphlet has been published for the use of employees reproducing a portion of the Manual for Infantry Drills now used by the United States Army.

PUBLIC SCHOOLS.

A large number of Indian pupils have been enrolled in the public schools, and the relationship between the public-school authorities and the Indians has been very satisfactory. In most communities there is but little opposition to the enrollment of healthy Indian children in these schools.

Where public-school facilities are available and Indian parents are owners of taxable property but have actually paid little or no taxes, the public-school authorities have maintained, when the district is poor financially, that children of such parents should pay for tuition in the public schools, the tuition to be paid for by the General Government. The office has taken the position that whenever one or the

other of the parents of Indian children is an owner of taxable property in the district, tuition for such children in the public schools should not be paid. Where they are not taxpayers, however, the Indian Office has paid for tuition of Indian children in the public schools an amount approximating that necessary to furnish school facilities for white children in the same community. Indian children are frequently admitted to these schools without the payment of tuition, even though their parents pay no taxes.

AID OF COMMON SCHOOLS IN EASTERN OKLAHOMA.

For the fiscal year 1913 there was appropriated by Congress the sum of \$300,000 "To be expended, in the discretion of the Secretary of the Interior under rules and regulations to be prescribed by him, in aid of the common schools in the Cherokee, Creek, Choctaw, Chickasaw, and Seminole Nations in Oklahoma." The purpose of this appropriation was to aid the public schools attended by Indian children whose parents do not assist in the support of the schools by the payment of taxes on their real estate. This appropriation resulted from a recent decision by the Supreme Court which relieved a large amount of unrestricted Indian lands in the Five Civilized Tribes' country from taxation.

Pursuant to regulations approved by the Secretary of the Interior, this money has been distributed to the Oklahoma public schools, payments to each district being based in part on the number of Indian children in attendance, and in part proportioned to the needs of the districts, their revenues available for school purposes differing because of the varying amounts of nontaxable Indian lands in different districts.

EFFICIENCY OF EMPLOYEES.

In order to strengthen the work now being done for Indian education, careful attention has been given to the improvement of the personnel of the service. To induce teachers to continue work along professional lines, a reading circle is maintained and books bearing upon the profession of teaching are selected for study and discussion. To add emphasis to this work, teachers are asked to prepare theses on subjects designated by the office and closely related to those treated in the texts discussed in the reading circle. The theses are submitted to the Indian Office, given a rating, and placed with the status files of the individual teachers. This has induced them to do more professional reading, and the service has been directly benefited thereby.

As a further encouragement the teachers were told that those who made a record of "excellent" in their efficiency report would be given a promotion of not less than \$2.50 per month. As a further inducement to teachers to enter the Indian service, legislation was secured providing that teachers may have, in addition to their annual leave of 30 days, 15 days educational leave with pay, this 15 days to be spent in attending summer schools, teachers' institutes, or other institutions that afford training which will directly increase their efficiency as instructors.

Another matter which will result in the increase in the compensation now received by employees is the provision in the current appro-

priation act authorizing the Commissioner of Indian Affairs to furnish necessary heat and light without charge to employees who are furnished quarters; such heat and light to be paid for out of the fund for heating and lighting other buildings at the same place. This amounts to a virtual increase in salary for many employees.

It has been difficult heretofore to retain in the service valuable employees in such positions as matron, industrial teachers, disciplinary teachers and others who, of necessity, are considered as being on duty at all hours of the day and night. In order to relieve this class of employees from the long hours incident to their service, superintendents have been authorized to allow them one-half day off duty each week. This relief, with such other annual and educational leave as they may be entitled to, renders service in these positions much more attractive than heretofore.

CONFERENCES.

A conference of supervisors and other employees of the service was held at Haskell Institute September 4 to 11, 1912; also one of employees among the Sioux Indians at Flandreau, S. Dak., November 12 to 15, 1913. These conferences have strengthened the supervision of schools and unified the activities and aims of employees in reference to the welfare of Indians.

MARRIAGE AND DIVORCE.

The constant efforts of this bureau for several years to overcome Indian customs as to marriage and divorce and to substitute therefor the practices recognized by law have met with considerable success, but there are certain deficiencies in the law which are embarrassing. Where Indians desire to be married according to law, they have no trouble in procuring a license and having the ceremony performed by an authorized person. However, complications are likely to arise when a divorce is sought, a number of State courts holding that they do not have jurisdiction to hear the application of noncitizen Indians residing on Indian reservations, and there is no law under which divorce suits may be taken into Federal courts. In such cases the Indians often, and naturally, follow their native custom, which is simply the abandonment of the spouse and perhaps the immediate marrying by Indian custom of another. In cases of this kind the office finds its hands tied; it can not consistently punish the Indians for following their own customs when it has no legal and no better plan to offer as a substitute. A number of crimes were committed during the year against Indian women and girls, and in every instance the office endeavored to bring about the prosecution of the offender. In some of the cases the crimes were committed off the reservations and under the jurisdiction of the States, but in others the offenses were committed on the reservations, and because of the inadequacy of Federal statutes the offenders have remained unpunished. The necessity of further legislation regarding this important subject is apparent and urgent.

MURDERERS OF SUPERINTENDENT STANLEY.

A brief statement was made in last year's report of the death of Mr. Will H. Stanley, formerly superintendent of the Soboba Reserva-

tion, at the hands of the Indians under his jurisdiction. Ambrosio Apapas, Francisco Lugo, Cornelio Lubo, Pio Lubo, Pablino Lubo, and Leonicio Lugo were convicted of this murder in the United States District Court for the Southern District of California, and were sentenced on March 27, 1913, to 10 years' imprisonment at McNeil Island penitentiary. This unfortunate tragedy was the culmination of a long series of events running through a number of years in which Leonicio Lugo was the principal. For years he had been a disturbing element and was continually inciting the Indians to opposition to constituted authority. The conviction of this ringleader and his coconspirators will undoubtedly have a salutary effect on the Indians and remove from an otherwise peaceable band criminal elements of danger and discord.

EMPLOYMENT OF INDIANS.

Procuring employment for Indians is an integral part of the work of Indian civilization, and its immediate direction is controlled by a Supervisor of Indian Employment. The purpose of this branch of work is, briefly, to bring the Indians and the work together. Family ties and home interests, health, climate, and environment have to be considered.

The contractors for the construction of the North Platte irrigation work in Nebraska have recently made arrangements for the employment of a number of Indians for that project. The development of western beet fields gives opportunities for the employment of Indians, and the sugar companies each year grant more liberal concessions in the way of railroad rates and care of young Indian boys in times of illness, in order to secure them as helpers in cultivating and harvesting this crop. These boys live in tents in small communities in charge of a Government employee, who sees that hygienic, moral, and social conditions are carefully looked after.

Through hearty cooperation between Indian-school superintendents and those in charge of reclamation and other projects, Indians are being given splendid opportunities for employment, of which they are availing themselves. Agreements are made with fruit growers and fruit companies for the harvesting of crops, and where cotton is grown Indians are employed for picking this staple. In fact, many fields of domestic and industrial activity are being opened for Indians under conditions which promote their general welfare.

PURCHASE OF SUPPLIES.

The importance and necessity of exercising economy in expenditures is receiving the greatest consideration, and the practice of inviting proposals through warehouses and locally in advance of making purchases has been followed closely. Thus the bids obtained in large distributing centers and at factories, plus freight charges to points of consumption, are compared with local bids. This results in lower prices, due to increased competition, and opportunity is afforded to utilize as far as practicable the low freight rates which apply on Government shipments over land-grant railroads.

The plan to have the disbursing officer of the Interior Department pay claims covering supplies purchased through the warehouses in lieu of their settlement through the Treasury Department, after such

claims have received administrative examination in the Indian Office, has effected a saving of time in the settlement of claims.

During the fiscal year there were purchased for the Indian Service approximately \$3,160,000 worth of goods and supplies.

ENROLLMENT WITH INDIAN TRIBES.

Applicants for enrollment with Indian tribes are required to furnish about the same kind of evidence as would be necessary to prove an inheritance before a court. The various Indian reservations have been established by Executive orders, laws, treaties, or agreements with Indian tribes, and in many instances enrollment for participation in land or other tribal benefits is limited by treaty stipulation, agreement, or special legislation, and varies accordingly.

During the past fiscal year 128 persons have been enrolled at agencies or reservations throughout the United States, exclusive of the Five Civilized Tribes, and 441 persons denied enrollment.

In some instances tribal authorities and Indian Service officials have challenged the enrollment of persons, and these cases are now being investigated, either in the field or before the department. There are about 260 such contested cases at the Cherokee School, North Carolina, to be passed upon before the reservation can be allotted.

At White Earth, 86 persons of mixed Chippewa blood enrolled with the tribe were challenged. Their rights have been carefully investigated by a special attorney of the department, and the record, including voluminous testimony, has been referred to the Court of Claims for findings of fact.

FINANCE.

The system of accounting maintained in the Indian Service is, necessarily, more complex and difficult than that of any other branch of the Government service, because of the number and variety of appropriations, as well as the large amount of tribal and individual Indian money handled. Appreciating the benefits to be derived from personal instruction of the field force in accounting methods as well as the necessity for more frequent and systematic investigation of the fiscal affairs of disbursing officers, special agents, qualified as expert accountants for that particular work, have been employed.

INDIVIDUAL INDIAN MONEYS.

The principal sources from which individual Indian moneys are derived are: (1) Sale of allotted and inherited lands; (2) lease accruals; (3) sale of timber; (4) oil and gas royalties; (5) earnings of outing pupils.

The total amount of deposits of moneys of this class in depositories on June 30, 1913, was approximately \$10,500,000. The Federal law, as respects individual Indian moneys, is broad and comprehensive and permits a wide discretionary authority in the administration of the trust moneys belonging to individual Indians. For administrative and accounting purposes, requests for authority to approve the disbursement of an Indian depositor's funds are submitted to this office by the local superintendent. The superintendent justifies his requests by submitting a report of the circumstances in each particular case.

Indian allottees are encouraged to use as much of their funds as necessary in building modern and sanitary homes on their lands.

On the theory that lease money represents income rather than principal, the greatest possible liberality has been exercised toward the lessor in the handling of his own rentals.

DEPOSITORIES FOR INDIAN MONEYS.

On March 17, 1913, the department approved a regulation, effective July 1, 1913, which provides for the payment of interest on all individual Indian funds held to the official credit of superintendents at the same rate as that paid by banks on open accounts of individual Indians. At the same time a new system for keeping in touch with holding banks was installed. This system requires a report to this office on a specified form, by national banks when a call is made by the Comptroller of the Currency and by State banks when a call is made by the State banking departments.

Deposits of tribal and individual Indian moneys at the close of the fiscal year 1913 amounted to approximately \$15,000,000, held in 450 depositories under surety bond. Two failures occurred among holding banks, but in each case the surety promptly paid to the Government the amount of the deposit with interest to and including the date of payment.

SALE OF INDIAN LANDS.

The acts of Congress approved May 27, 1902 (32 Stat. L., 245), March 1, 1907 (34 Stat. L., 1015), May 29, 1908 (35 Stat. L., 444), June 25, 1910 (36 Stat. L., 855), and February 14, 1913 (37 Stat. L., 678), provide for the sale of allotted and inherited Indian lands. During the fiscal year 317 sales have been made, involving 31,576.74 acres, consideration \$692,413.28.

Some criticism has been made by purchasers of Indian land on account of delay in the approval of sales. The chief cause of delay is the complications which arise over the heirs of the deceased allottee. In many cases the determination of the heirs is a difficult and complex question. Recently changes have been made in the departmental practice in sales cases, which will permit of sales being approved more expeditiously than formerly. It is believed that this will have a tendency to increase prices and to popularize sales of Indian lands.

MINING ON INDIAN LANDS.

Oil and gas mining operations on Indian lands in Oklahoma have been increasingly active during the year. A productive oil pool discovered near Cushing, Okla., stimulated leasing in the Five Civilized Tribes to approximately 50 per cent over last year. Many leases of allotted lands under the Sac and Fox, Ponca, Pawnee, and Kiowa Agencies have been taken, and some development work has been done. The price of crude oil advanced from 70 cents per barrel on July 16, 1912, to a maximum of 88 cents per barrel on June 30, 1913.

Discovery of oil in the State of Washington has resulted in the filing of many applications for permission to negotiate leases of lands on the Quinalt Reservation. A thorough investigation in connec-

tion with the acquiring of leases in this field was begun, pending which the approval of leases was suspended. At the present stage of development, prospects for finding oil in paying quantities on this reservation can only be conjectured.

Lands on the Shoshone Reservation in Wyoming have been leased for oil and gas purposes for several years, and some wells have been brought in. Development has been slow and small returns derived from this source, owing largely to the lack of proper transportation facilities.

The production of oil and gas in the territory of the Five Civilized Tribes is referred to under that head.

OIL AND GAS MINING LEASES ON OSAGE RESERVATION.

During the year there were leased 24,561 acres of the so-called unleased portion of the Osage Reservation (consisting of approximately 800,000 acres) for oil and gas mining purposes under regulations raising the rate of royalty for the Indians from one-eighth to one-sixth, and providing for competitive bidding for Indian oil and gas leases. By the provisions of the act of June 28, 1906 (34 Stat. L., 539), all the minerals under the lands within the Osage Reservation were reserved to the tribe for a period of 25 years from April 8, 1906.

In the early part of 1912 the Osage tribal council authorized the principal chief to execute four leases of about 200,000 acres each, covering the entire unleased part of the reservation. Notwithstanding the absence of departmental regulations on the subject, as required by law, the four leases were presented to the department in the spring of 1912 by the Osage tribal council, with the request that they be approved. They were promptly disapproved by the Secretary on June 14, 1912, on the ground that they were not in accord with the best interests of the Indians and contained some provisions which were thought to be illegal.

The department on July 3, 1912, prescribed regulations as required by the act of June 28, 1906. These regulations provided for offering the lands to the highest bidder under sealed bids. Approximately 107,000 acres were advertised for lease and the bids opened on November 11, 1912. The bids covered 42,210 acres, the bonus offered aggregating \$143,438.65, an average of about \$3 per acre. While the lands were under advertisement, the Uncle Sam Oil Co. continued its efforts to have the lease executed in its favor approved in spite of the previous definite disapproval by the department. The Osage council passed a resolution rejecting all the bids received by it under the advertisement made in accordance with the approved regulations of July 3, 1912, and refused to reconsider its action, despite a petition signed by a majority of the male adults in which the council was asked to accept the highest bids.

The action of the council and the circumstances surrounding the execution of the four leases were such that the department ordered a special investigation of the entire matter, and on receiving the report, the department issued an order removing the entire Osage tribal council. A suit was instituted against the Secretary of the Interior by one of the deposed councilmen in the Supreme Court of the District of Columbia, questioning the right of the Secretary to remove him. The court rendered a decision in which the action of the Secre-

tary was upheld, and that decision was affirmed on appeal to the court of appeals. After the dismissal of the tribal council, a special election was held on January 22, 1913, which resulted in practically the unanimous election of new tribal officials. The bids rejected by the old council were reconsidered by the new council, the highest accepted, and the principal chief authorized to execute leases to the successful bidders.

The regulations of July 3, 1912, prohibited pipe-line companies from bidding. Some of the best bids received on November 11, 1912, were made by the Gypsy Oil Co. On account of its close affiliation with the Gulf Pipe Line Co., the department held that the Gypsy Oil Co. was not eligible and refused to approve leases executed in its favor by the principal chief of the Osage Tribe. Eight leases in favor of parties shown conclusively not to be interested in pipe-line transportation, covering 24,561 acres, were approved by the department in the early part of March, 1913.

On January 9, 1913, the regulations were amended so as to permit leases and assignments to be approved to pipe-line companies provided that no right, claims, or equities as against future action by or under authority of Congress respecting oil or gas pipe line companies should be predicated upon such approval.

INHERITANCE CASES.

The act of June 25, 1910 (36 Stat. L., 855, 856), devolved upon the Secretary of the Interior the duty of determining the heirs of deceased Indians, but failed to make an appropriation to carry out this work. As already said, there are approximately 40,000 Indian heirship cases pending at the various agencies, representing inherited property, valued at more than \$60,000,000, which can not be sold or otherwise disposed of until the heirs are determined. The adjudication of these cases is one of the most important duties confronting the Indian Service. This work has been greatly handicapped by the lack of appropriation and, consequently, by lack of a sufficient number of employees to handle it. The Indian appropriation act for the fiscal year 1914 has partially removed this impediment by an appropriation of \$50,000.

There is a provision that upon the determination by the Secretary of the Interior of the heirs of a deceased Indian, the sum of \$15 from the proceeds of the estate shall be paid into the Treasury, to cover the cost of determining the heirs.

During the year over 10,000 cases have been received pertaining to heirship matters. This includes not only cases where the determination of heirs is the sole object, but also includes wills and petitions for sales and all miscellaneous correspondence in connection therewith.

Special attention was given the determination of heirs at the Shoshone and the Uintah and Ouray Reservations in order to safeguard the water rights of the Indians. Each of 28 agencies reports from 100 to 1,200 undetermined inheritance cases. An adequate appropriation available for both field and office work should be provided by Congress so that the Indian Bureau can be able to clear up, at the earliest possible date, the tangled condition of the estates of deceased Indians, in order that the lands not needed by the Indians may be leased or sold and the proceeds used to improve and farm the allotments of the heirs.

THE FLORIDA SEMINOLES.

For hundreds of years the Seminoles of Florida have made their homes in the Everglades, and have obtained a living by hunting, trapping, and fishing.

On account of the various drainage projects now being constructed for the reclamation of the Everglades, and the diminishing swamp area which has been their home and hunting ground these Indians are rapidly being deprived of the game upon which they have heretofore subsisted. They are in no sense agriculturists but are natural hunters and trappers, making fully 75 per cent of their expenses of living from alligator skins. In addition to the restriction of their hunting grounds, during the past year the tanneries have discontinued the purchase of alligator skins, the main source of their income.

An appropriation of \$10,000 for their relief was reappropriated and made available in the Indian appropriation act for the current year (37 Stat. L., 518), and on March 1, 1913, Mr. Lucius A. Spencer, of Florida, was commissioned as a special commissioner to these Indians. It was not deemed advisable, taking into consideration the traditions and history of this remnant of Osceola's band, to place a Government official in charge of them as the term is usually applied to Western reservations, as they are extremely suspicious of the good intentions of any representative of the Government; but their condition required some action in order to prepare them for the inevitable change which must in a few years come to them.

There are about 400 of these Indians who live in camps surrounded by vast tracts of uninhabited swamps and morasses. They are splendid types of the physical man and are nearer the aboriginal Indian in habits and customs than almost any other band.

The Florida State Legislature in 1889 set aside 36 townships as a Seminole Reservation, but while the law apparently has not been repealed, nearly all the land has been obtained by private persons. A bill to set aside 15 townships in Monroe County, Fla., was introduced in the legislature of that State in 1911, but failed to become law.

During the period from 1895 to 1900, from funds provided by Congress, 23,061.72 acres lying in Ts. 47 and 48 S., Rs. 32, 33, and 34 E., were purchased for the Seminole Indians. On November 22, 1897, there were withdrawn for them approximately 480 acres lying in Ts. 50 and 51 S., Rs. 40 and 41 E.

All efforts for their education on the part of the State and Federal Governments and missions have been unsuccessful, because of the severe penalty inflicted by the tribal laws on any Seminole who learns to read and write.

TRUST PLAN FOR PUEBLOS.

It has been proposed that the lands of the Pueblo Indians shall be deeded by them to the Government to be held in trust for their benefit for a period of 25 years.

There are 20 Pueblos in New Mexico, with a total population of about 6,000 Indians, Laguna, with about 1,600, being the largest.

The land grants to these Indians were in most cases made by the King of Spain in 1691, or later, and these titles have been confirmed to them by Congress or by the Court of Private Land Claims and

patented since the American occupation after the Mexican War. These Indians have lost considerable land through their own improvidence, the encroachments of white settlers, and the adverse decisions of the courts, and there are now pending before the courts suits involving the title to much of it.

Owing to the gradual loss of land, and the difficulty of maintaining schools and otherwise administering the affairs of these Indians because of the lack of jurisdiction over their lands, the department, in 1911, recommended to Congress the enactment of legislation which would permit the Secretary to accept, on behalf of the United States, as trustee, all such lands as might be conveyed by any of the communities of Pueblo Indians. The bills making this provision were introduced in the Sixty-second Congress as H. R. 22528 and S. 6085.

Representatives of 11 of the Pueblos made a trip to Washington last February, accompanied by their special attorney, to urge upon the department the acceptance of trust deeds and to petition Congress to enact legislation authorizing the Secretary of the Interior to accept the trust. These Indians appeared before the Senate Committee on Indian Affairs in connection with the hearing on Senate bill 6085, where they argued that if their property is to be conserved it will be necessary for the United States to hold it in trust for the next 25 or more years, and until the coming generation may have an opportunity to become educated.

Although by the Territorial law the Pueblo lands were exempted from taxation, and this same exemption is provided in the constitution of New Mexico, the decision of Judge Pope on July 22, 1912 (198 Fed. Rep., 539), holds that the separate provisions of the State constitution which contain the compact with the United States that the Pueblo lands are Indian country is unconstitutional, and therefore the lands are subject to taxation and to sale for nonpayment of taxes, in accordance with the provisions of the State law.

OPPOSITION OF PUEBLOS TO EDUCATION.

The Federal Government has made appropriations from time to time to maintain schools among the Pueblo Indians; nevertheless, the Indians have refused to lease buildings for school purposes in their villages, in some instances making it necessary for the Government to institute condemnation proceedings to procure land on which to erect permanent day-school plants. Out of 18 pueblos under Albuquerque and Santa Fe schools, 13 sites have been procured in this manner.

There was also opposition to the erecting of school buildings among the Pueblo Indians. At San Domingo the Indians at one time showed some actual resistance to employees undertaking to build a school-house. This resistance, however, was insignificant and the construction work has proceeded without any interruption, although the Indians showed considerable resentment. If handled discreetly and tactfully, it is believed the opposition will soon disappear and the advantages of having in their midst a trained teacher and a well-equipped day-school plant will be recognized by the Indians.

The threatened taxation of their lands and their utter inability to meet such payments have awakened the Pueblo Indians to the need of an adjustment to the conditions which surround them, and many

of them are now willing and anxious to receive the aid of the Government, so that their children may have opportunity to adopt the customs of white communities which they have refused for themselves.

The Indians are generally favorable to education and anxious to enroll their children in school. Some of the Hopis, however, refused to enroll their children. They were put into school, against the wish of the parents, and the superintendent was authorized to retain them in his boarding school during the summer vacation unless the parents would agree to return them to school at the opening in September, 1913.

RELEASE OF APACHE PRISONERS OF WAR.

The survivors of Geronimo's band of Apaches and their descendants, who for many years have been living at Fort Sill, Okla., as prisoners of war, have been released, some going to the Mescalero Apache Reservation in New Mexico, and others remaining in Oklahoma. On April 2, 1913, 183 of these Indians in charge of Maj. Geo. W. Goode, United States Army, went to Mescalero, where they are now living with this branch of their kindred, under the supervision of the superintendent of the Mescalero Reservation. The transfer of these Indians was made with their consent and under the terms of the act of Congress passed at the last session making the necessary appropriations for the purpose. There were 78 of the band who elected to remain in Oklahoma, where they will be permanently located on allotments provided for them.

FIVE CIVILIZED TRIBES.

The tribal work pertaining to the Five Civilized Tribes is performed under the direct supervision of the Commissioner to the Five Civilized Tribes acting under instructions from the department, through this office. The details of the work performed by him during the past year are set forth in his annual report to the Secretary of the Interior.

The affairs of individual Indians after allotments are made, especially of the restricted class remaining under the supervision of the department, are handled through the office of the superintendent of the Union Agency under direction of this office.

There are 101,216 persons enrolled as members of the Five Tribes, of which number 32,939 are what is known as "restricted" Indians, which means that they are still wholly or partially under the supervision of the Government. The citizenship rolls were closed by operation of law on March 4, 1907. There were 1,238 applications for the removal of restrictions made during the year ended June 30, 1913, making a total to that date of 9,594.

The work of allotment is practically completed, although there remains considerable work in connection with the closing of final records and other details and the disposition of the remaining tribal property.

The work at the Union Agency, in connection with the Indians after allotment, includes the making of oil and gas and other leases by Indians under supervision of the department, the collection,

supervision, and disbursement of royalties, removal of restrictions, leasing of land, and the handling of money derived from sales of land, all of which required the handling of \$8,215,989.71 by the agency during the year ended June 30, 1913. During that time there were filed at the Union Agency 28,526 leases of which 26,846 were for oil and gas; 3,522 oil and gas leases were approved; 49,176,000 barrels of oil were sold. There were collected during the year for individual Indians from oil and gas leases \$1,301,326.99, and for the Choctaw and Chickasaw tribes as royalty from coal and asphalt leases \$217,226.61. The proceeds of lands sold for Indians under the supervision of the agency aggregated \$502,406.36.

Under existing law the probate courts of the State have jurisdiction in probate matters affecting minor Indians, and during the year reports have demonstrated that such matters are not in a satisfactory condition, principally because of the vast amount of business handled by such courts and the inadequate statutes affecting probate procedure. A bill seeking to remedy existing evils was introduced in the last Legislature of the State of Oklahoma, and although its passage was urged by the Government and the entire Oklahoma delegation in Congress it failed of enactment.

LEGISLATION.

The Indian appropriation act for the fiscal year 1913 was not approved until August 24, 1912. It therefore became necessary for the appropriation act of the previous year to be extended, which was done by joint resolutions of July 1 and August 1, 1912.

For the fiscal year 1910 the Indian appropriation act carried about \$11,800,000. The act for 1911 carried about \$9,200,000, for 1912 \$8,800,000, and for 1913 \$8,900,000. The estimates for the Indian Service for the fiscal year 1914 amounted to \$11,303,316.53. The Indian appropriation act for the fiscal year 1914, which failed of passage at the regular session of the last Congress, but was enacted at the special session of the present Congress and approved by the President June 30, 1913, after very extensive hearings by the Senate and the House Committees on Indian Affairs, carries an appropriation of \$9,461,819.67.

In addition to the usual items and appropriations, the act of June 30, 1913, carries an appropriation of \$50,000 for the purpose of determining the heirs of deceased Indian allottees, pursuant to the act of June 25, 1910 (36 Stat. L., 855); an appropriation of \$100,000 (reimbursable) for the purpose of encouraging industry among the Indians and to aid them in the culture of crops; and an appropriation of \$25,000 for a joint commission of three members of the Senate and three members of the House of Representatives for the purpose of making inquiry into the conduct and management of the Bureau of Indian Affairs. This act for 1914 also ratified an agreement dated May 10, 1911, with the Wiminuche Band of Southern Ute Indians, which agreement relates to the exchange of certain lands; an appropriation of \$100,000 was made to provide school facilities for the children of the Navajo Indians; and provision was also made for the appointment of a commission consisting of two persons to make a roll of the Chippewa Indians allotted within the White Earth Reservation in the State of Minnesota.

This act also provides for a commission consisting of two members of the Senate and two members of the House of Representatives for the purpose of investigating the necessity and feasibility of establishing, equipping, and maintaining a tuberculosis sanatorium in New Mexico for the treatment of tuberculous Indians; also to investigate the necessity and feasibility of procuring impounded waters for the Yakima Reservation, or the construction of an irrigation system upon said reservation, to impound the waters of the Yakima River for the reclamation of the lands within the reservation.

There was also appropriated \$150,000 for the purchase of allotments for the individual members of that portion of the Wisconsin band of Pottawatomie Indians now residing in the States of Wisconsin and Michigan.

Section 26 of the act provides for the installation of a system of bookkeeping in the Bureau of Indian affairs which will afford a ready analysis of expenditures by appropriations and allotments and by units of the service, showing for each class of work or activity carried on, the expenditures for the operation of the service, for purchase and construction of additional property, for repair and preservation of property, salaries and wages of employees, and for other expenditures and purposes; but it carries no appropriation to make the provision effective.

The most important general legislation passed during the fiscal year, other than that contained in the Indian appropriation act, is as follows:

By the act of July 1, 1912, the Secretary of the Interior is authorized, when the amount of tribal funds due the Winnebagoes in Wisconsin shall have been ascertained in accordance with the enrollment as provided by law, to expend the funds for their benefit in such manner, including the purchase of lands for said Indians, as he may deem proper, or, in his discretion, to distribute the funds, or any part thereof, per capita among the Winnebago Indians in Wisconsin.

The act of July 19, 1912, authorized the Secretary of the Interior, in his discretion, to approve maps showing right of way and definite location of proposed drainage districts and assessments, made under the laws of Oklahoma, upon the allotments of certain Absentee Shawnee and Citizen Potawatomi allottees in the Little River drainage district in Pottawatomie County, Okla., and upon the allotments of certain Sac and Fox allottees in Deep Fork drainage district in Lincoln County, Okla.

By the act of March 4, 1913 (37 Stat. L., 1007), the Secretary of the Interior is authorized, in his discretion, to request of the present claimant under any railroad land grant a relinquishment or reconveyance of any lands situated within the States of Arizona, New Mexico, or California, passing under the grant, which are shown to have been occupied for five years or more by an Indian entitled to receive the tract in allotment under existing law, but for the grant to the railroad; and, upon the execution and filing of such relinquishment or reconveyance, the land shall thereupon become available for allotment and the company relinquishing or reconveying shall be entitled to select, within the period of three years after the approval of the act, and have patented to it, other vacant, nonmineral, non-timbered surveyed public lands of equal area and value, situated in

the same State, as may be agreed upon by the Secretary of the Interior under the terms of the act.

The Secretary of the Interior is authorized by the act of March 4, 1913 (37 Stat. L., 1007), under rules and regulations to be prescribed by him, to grant to the operator of any coal mine in the State of Oklahoma, the right to lease additional acreage from the unleased segregated coal lands of the Choctaw and Chickasaw Nations in Oklahoma, not to exceed in any case 640 acres of land, under certain conditions named in the act.

The act of February 14, 1913 (37 Stat. L., 678), very materially broadens the scope of section 2 of the act of June 25, 1910 (36 Stat. L., 855), relating to the disposition of trust property of Indians by will. Under the original law only allotments held in trust could be disposed of by will by the allottee with the approval of the Secretary of the Interior. The act of February 14, 1913, authorizes any Indian 21 years of age to dispose of any right, title, or interest in any allotment held under trust or other patent containing restrictions on alienation, or individual Indian moneys or other property held in trust by the United States, with the approval of the Secretary of the Interior and under such regulations as he may prescribe.

The act of February 14, 1913 (37 Stat. L., 675), authorizes the sale and disposition of the surplus unallotted lands in the Standing Rock Indian Reservation in the States of North Dakota and South Dakota.

TRADERS' CLAIMS AGAINST INDIANS.

Superintendents were directed on December 28, 1910, to forward to the Indian Office all claims for goods furnished and services rendered to individual Indians prior to December 17, 1909. Claims amounting to \$1,706,196.82 were submitted. The greater part of these claims were against Indians in Oklahoma, South Dakota, Montana, Wisconsin, and Nebraska. After compiling records in this office of the claims submitted, they were returned to the superintendents with a circular letter under date of October 12, 1912, instructing them to audit each claim with the view to determining the reasonableness of the charges, and then to call in the debtors and creditors and endeavor to liquidate the indebtedness in so far as the funds of the Indian debtor might permit without depriving the Indians and their families of a means of support. Sixty-two reservations and about 2,500 traders are involved in the outstanding indebtedness.

During the year authorities for the settlement of 206 claims were granted, and the Indian traders themselves adjusted 57 of their accounts.

INDIAN ART.

The blanket industry among the Navajo Indians of Arizona and New Mexico is perhaps the most profitable of the native industries. The actual number of Indians engaged in this industry is unknown, but it is estimated that between \$600,000 and \$700,000 worth of blankets were produced during the year. The women usually do the weaving. Plans have been formulated to award prizes ranging from \$50 to \$100 at Indian fairs and exhibitions this coming fall, for the best blankets made in sizes of not less than 4½ by 6½ feet from

wool clipped from native sheep. The whole purpose of these plans is to discourage inferior work and the making of the smaller sizes.

Many of the tribes are still more or less extensively engaged in the making of baskets, beadwork, and pottery. At Pima about 1,200 Indians made baskets during the year. About 9,000 baskets were made, valued at \$14,500. The Indians at this reservation also made about 16,500 pieces of pottery, valued at \$4,300. At Moqui about 100 baskets, valued at \$1,000, and 100 pieces of pottery at approximately the same value were made. At Camp Verde the Indian women wove some excellent willow baskets ranging in value from \$1 to \$30 apiece.

At Red Moon, Okla., about \$220 worth of bead work was done for the Mohonk Lodge, and about \$200 worth was sold to the Indian traders.

At La Jolla, Cal., the Sybil Carter Lace Association has a lace teacher who brings supplies to the Indian women and buys from them the lace manufactured. At Rincon, Cal., 11 Indian women are receiving instructions in lace making from a teacher under the auspices of the Redlands Indian Association.

* * * * *

ALLOTMENTS.

During the year allotments to 4,262 Indians, covering 1,159,585 acres, were approved, and within the same period 5,141 allotments were made in the field but not approved, embracing an aggregate area of 591,772 acres. These allotments were made on the various reservations, as follows:

Colorado River, Ariz.—Allotments of 10 acres each of irrigable land to 510 Indians, under the provisions of the act of March 3, 1911. There is no authority for the disposal of any of the surplus lands within this reservation, but bills have been pending under which the surplus irrigable land there, approximately 100,000 acres, would be turned over to the State for disposal under the Carey acts.

Colville, Wash.—Approximately 79,018 acres were allotted to 601 Indians. This work, it is expected, will be completed in the near future and the surplus lands classified and appraised prior to disposal in accordance with the provisions of the act of March 22, 1906 (34 Stat. L., 80).

Fort Berthold, N. Dak.—The allotment work on this reservation, under the act of June 1, 1910 (36 Stat. L., 455), is being brought to a close by the superintendent in charge. During the fiscal year just ended there were allotted 17,280 acres to 61 Indians. The surplus lands, other than those classified as coal, lying north and east of the Missouri River have heretofore been opened in accordance with the act mentioned.

Fort Hall, Idaho.—During the year some 76,760 acres were allotted to 441 Indians. Of this, 72,160 acres were grazing lands and 4,600 acres irrigable lands. This completes the work on this reservation, 1,859 Indians having been allotted 39,280 acres of irrigable and 305,040 acres of grazing land. There is no authority under existing law for the disposal of the surplus lands—some 100,000 acres, mostly mountainous or arid.

Lummi, Wash.—Allotments to 28 Indians, under the treaty of January 22, 1855 (12 Stat. L., 927), covering 974 acres, were made during the year, which exhausts the available land within this reservation.

Pine Ridge, S. Dak.—Under the act of March 2, 1889 (25 Stat. L., 888), and supplemental acts, 152,341 acres were allotted to 640 Indians. Owing to the large number of Indians within this reservation, at least 12 months longer will be required within which to complete the allotment work. A part of this reservation was opened by the act of May 27, 1910 (36 Stat. L., 440), but there is no authority for the disposal of the remainder other than by allotment.

Truckee-Carson, Nev.—Allotments of 10 acres each were made to four Indians within the seven and one-quarter sections heretofore withdrawn for allotment purposes under the Truckee-Carson irrigation project, making a total of 3,640 acres allotted to 360 Indians.

Quinaielt, Wash.—Approximately 14,400 acres of agricultural and grazing land within this reservation were allotted during the year to 180 Indians. A large part of this reservation is heavily timbered and should be administered for the benefit of the tribe at large. There is no authority for the disposal of any of the lands within this reservation except by allotment. Every available acre will probably be required for allotment purposes.

Standing Rock, N. and S. Dak.—During the year 193 Indians were allotted 65,401.89 acres. The act of February 14, 1913 (Public, 380), provides for the disposal of the remaining lands within this reservation.

White Earth, Minn.—Allotments on this reservation are being made by the superintendent in charge and 8,326 acres were allotted to 112 Indians during the fiscal year just ended. Desirable lands for allotment purposes within this reservation are becoming very scarce and it is doubtful whether sufficient land will be found to provide for all Indians entitled.

Wind River, Wyo.—A number of the Indians within this reservation were allotted during 1905-6. In the early spring of 1913 a special allotting agent was directed to continue the work there. Prior to June 30, he made allotments in the field covering 12,650 acres to 148 Indians. Owing to the quantity of work on hand, at least 12 months will be required to finish it.

Yakima, Wash.—On June 30, 1913, allotments in the field to 241 Indians, embracing 37,240 acres, had been made. This work will be completed during the present fiscal year and possibly the surplus lands placed on the market as authorized by the act of December 21, 1904. (33 Stat. L., 595.)

On the public domain 32 allotments were approved during the year, covering 4,709.41 acres, and 982 applications, covering 122,240 acres, were filed at various local land offices in the States of Arizona, New Mexico, Montana, North Dakota, Washington, and California. The Indian appropriation act of June 30 prohibits the use in Arizona or New Mexico of any part of the sum available for survey and allotment work. This necessitated the practical suspension of field operations in these States and will prevent any further active field work there with a view to aiding Indians to obtain allotments on the public domain during the present fiscal year.

CONCLUSION.

In conclusion I wish to say that I am emphasizing in every possible way the industrial education of Indian pupils and the industrial development of the Indian population generally, and every effort is being made to improve the efficiency of the employees of the Indian Service in order to accomplish more successfully the work along these lines.

I am also emphasizing the need of and doing everything possible to obtain for the Indians more sanitary homes, more adequate school facilities for Indian children, supplying sick Indians with medical attention and taking precautionary methods to prevent disease, adjusting more equitably the cost of irrigation projects constructed out of reimbursable funds, making larger use of the timber resources of the Indians for their industrial and social advancement, taking advantage of the valuable grazing lands of the Indians to build up tribal herds as well as promoting among individual Indians a larger and more profitable cattle, sheep, and horse industry, and utilizing in every practicable way the resources of the Indians, both tribal and individual, in promoting their more complete civilization and economic independence.

It is my fixed purpose to bring about the speedy individualizing of the Indians, and to this end I shall continue to devote my best efforts.

Very truly yours,

CATO SELLS,
Commissioner.

The SECRETARY OF THE INTERIOR.

REPORT

OF THE

SECRETARY OF AGRICULTURE.

Mr. PRESIDENT: I respectfully present my report for the Department of Agriculture for the year 1913. I shall deal as briefly as possible with the business of the department, point out the changes in organization that have been made, summarize the more important results and developments, and indicate the recommendations submitted to Congress for action.

Those interested in the details of the work of the several bureaus and divisions will find in the reports from the several officers full and detailed information.

BUSINESS OPERATIONS.

The scope of the activities of the department is constantly increasing. When the department was first organized and for a number of years thereafter its work was confined largely to matters directly affecting agriculture. Later, the Weather Bureau and the Forest Service were transferred to the department, and more recent legislation has charged the department with the enforcement of numerous regulatory laws, including those relating to meat inspection, animal and plant quarantine, foods and drugs, game and migratory birds, seed adulteration, insecticides and fungicides, the manufacture of vaccines and viruses, etc., many of which have only an indirect bearing on agriculture. Its activities now affect not only those living in rural communities but urban dwellers as well, so it can be said that the work of the department at the present time concerns directly or indirectly all the people.

Appropriations.

To carry on the work of the Department of Agriculture during the fiscal year ended June 30, 1913, Congress appropriated \$16,651,496 for ordinary expenses, in addition to which permanent annual appropriations, special appropriations, and balances from prior years amounting to \$8,303,412.68 were available, making a total of \$24,954,908.68. The total funds which have been or will be returned to the Treasury as unexpended balances of appropriations and miscel-

laneous receipts aggregate \$3,132,303.82. Of this amount, there was received during the fiscal year ended June 30 last, from the sale of timber, for grazing, condemned property, etc., \$2,449,287.66, which has been deposited in the Treasury as miscellaneous receipts and can not be used unless reappropriated by Congress.

Comparison of Expenditures for Various Lines of Work.

The present appropriations for work of a regulatory nature or only indirectly affecting agriculture constitute about three-fifths of the total funds of the department, or approximately \$15,000,000, leaving two-fifths, or \$9,000,000, available for scientific research, experiments, and demonstration work directly affecting the farmer. While it would be difficult to segregate the funds which are used for purely demonstration work, because of its close relation in many instances to investigational work, it is safe to say that more than \$1,000,000 is devoted to such work.

Appropriations Recommended.

In the estimates for the next fiscal year I have recommended an increase in the appropriations for the department of \$1,074,387. The principal items in this increase are:

For extending the work of eradicating animal diseases, the enlargement of the work in feeding and breeding live stock, for dairying, and for enlarging and enforcing the meat-inspection law, \$250,860.

For the extension of investigations in connection with the introduction and breeding of new plants, the study and control of plant diseases, and the improvement of crop production with particular reference to cereals, \$45,660.

For the classification of agricultural lands and the survey of forest homesteads on the national forests, \$143,577.

For extending the investigations of the handling, shipping, and storing of poultry, eggs, and fish, which are carried on in connection with the enforcement of the food and drugs act, \$60,441.

For enlarging the investigation of fertilizer resources, soil-fertility investigations, and investigations of the chemical and physical properties of soils, \$24,420.

For extending investigations in connection with insects attacking deciduous fruits, cereals and forage crops, and forest trees, \$71,000.

For the enforcement of the migratory bird law, \$90,000.

For increasing the accuracy of crop forecasts and estimates, \$57,000.

For extending the study of road management and investigations of road construction and maintenance, \$113,550.

For investigations of the marketing and distribution of farm products, \$144,000.

For the inauguration of live-stock and crop demonstrations in the sugar-cane and cotton areas of Louisiana, \$50,000.

A recommendation has been made for the discontinuance of the present method of congressional seed distribution and the substitution of constructive work in the securing and distributing of new and valuable seeds and plants. This work can be done at a decreased cost of \$146,000.

By reorganizations in the work of the Weather Bureau a saving of \$37,340 can be effected, and yet the efficiency of the work can be increased. A decrease of the amount indicated has been recommended accordingly.

Improved Accounting System.

An important change in the system of handling the fiscal affairs and methods of accounting in the department was effected toward the close of the year. The change so far is proving very satisfactory, and is resulting in great economy in time and money.

A further change has been made. The administrative audit of accounts, formerly made in the Division of Accounts and Disbursements, has been transferred to the several bureaus. This change was made necessary by a provision in the act of August 23, 1912 (37 Stat., p. 375). The head of each bureau is now held responsible for the accuracy of accounts arising in his bureau.

Under the revised system of accounting the classification of expenditures according to their character, which was one of the features of the system inaugurated by the Commission on Economy and Efficiency, has been retained, but in a simplified form. The budget plan recommended by the commission is used to a considerable extent in preparing the annual estimates. The various supervising officers estimate the amounts which will be needed for the various items of expenditure, including salaries, travel, station and field expenses, equipment, apparatus, stationery, furniture, rent, freight, fuel, etc., and from these estimates the total funds which will be required for each line of work or activity are computed.

PERSONNEL.

The securing of men of the requisite training and experience in the various fields of agricultural science has been one of the serious problems which for some time has confronted the department. Two causes have tended to bring about this situation. One has been the low maximum salary which the department is permitted to pay to its scientific investigators as compared with the salaries paid by outside institutions and commercial concerns. The other has been the comparatively small number of strong, virile men who have been trained in scientific agriculture. Because of the great demand

for such men in this country and abroad, the department is constantly losing men whom it ought to keep, and it is unable to find an adequate supply of just the right type of man to replace them. With the growing demands for men trained in the newer fields of rural economics, rural sanitation, marketing, cooperation, and similar subjects, the situation is becoming acute.

Under the present law the maximum salary which can be paid is \$4,000. Many of the leaders in the department are men who could command salaries in many cases more than twice what they are receiving, but who remain because of their interest in the work. It is only fair to such men that the department should be in a position to recognize their services to the country in a substantial way.

The department has consistently maintained that its scientific work would be seriously handicapped by the creation of fixed or statutory positions for its scientific investigators, and that a system of fixed salaries would cause it to lose many men because of the great demand for their services on the outside. Authority is now vested in the Secretary to make promotions of employees engaged in scientific and technical work from time to time. Great care has been exercised to prevent abuse of this authority, and the plan has proved extremely satisfactory as well as economical. Practically all of the clerical and subclerical employees of the department are on the statutory roll, and no particular difficulty has been experienced under the system of fixed salaries.

Changes in Personnel.

There were 14,478 employees in the department on July 1, 1913. Of these, 2,924 were employed in Washington and 11,554 outside of Washington. Of the entire force, 1,812 were engaged in scientific investigations and research, 1,323 in demonstration and extension work, 687 in administrative and supervisory work, 6,021 in regulatory and related work, and 4,635 were clerks and employees below the grade of clerk. One thousand one hundred and thirty-four probational appointments in the classified service (positions subject to examination), 153 reinstatements, and 83 transfers from other departments were made during the past year. There were 2,699 promotions and 113 reductions in salaries. The resignations totaled 885; 227 appointments were terminated; 38 persons were removed from the service on account of misconduct; and there were 52 deaths. In the positions excepted from examination, chiefly agents and experts, there were 2,919 appointments made for temporary periods, 145 promotions in salary, and 115 reductions. Four hundred and twenty-four of these employees were separated from the service through removal, resignation, or death, and 1,925 appointments terminated.

Efficiency Ratings.

The need in the department of a uniform system of efficiency ratings and registers for clerical and subclerical employees on the statutory roll on which to base promotions has been felt for a long time. After conference with the civil-service officials, such a system was inaugurated early in the summer. It is believed that this system will eliminate to a large extent the danger of making favoritism or any other consideration rather than merit the reason for promotion.

The department is working in the closest possible relationship with the Civil Service Commission in the handling of its appointments. Because of the technical and scientific nature of much of the work of the department, it has been found difficult to secure the right kind of men from the regular registers of the commission. It has therefore been necessary to hold special examinations from time to time.

CHANGES IN ORGANIZATION OF THE DEPARTMENT.

The foregoing changes were made to promote economy, the orderly handling of financial matters, and the development of individual efficiency in the business force. Other changes in organization have been effected which aim to develop better coordination among the several bureaus of the department and between the department and other Federal departments and the State agricultural agencies.

REORGANIZATION OF THE WEATHER BUREAU.

Following the report of a special committee charged with suggestions for the reorganization of the Weather Bureau, changes have been brought about which reduce expense, eliminate certain duplications between Federal departments, and restore that bureau strictly to its field of scientific usefulness, from which at one time it had somewhat departed. Under this reorganization it will conduct its work wholly in the interests of agriculture, commerce, and navigation, and will plan its research work with a view to improving its services to these three important interests.

The Stations and Substations.

One of the first steps will be the gradual reorganization of the stations and substations. This will include the elimination of stations and substations which are not needed, the limiting to forecasting of the work of stations which are not well located for carrying on climatological work previously assigned to them, the discontinuance of the issuance of complete maps from stations in territories where these maps have not proved of interest or particular value,

and the confining of the work of certain stations to special crop service. In this plan certain river, rainfall, and snowfall stations will be discontinued and changes will be made in the location of other stations to effect telegraphic, cable, and telephonic economies.

Cooperation with the Hydrographic Office.

Cooperation between the Hydrographic Office of the Navy Department and the Weather Bureau in the matter of the publication of marine meteorological charts has been effected. The Weather Bureau will discontinue the publication of marine meteorological charts and will hereafter supply to the Hydrographic Office for publication on the pilot charts all necessary meteorological data, and the Hydrographic Office will reciprocate by supplying these charts to all Weather Bureau stations requiring them.

Change of Plan at Mount Weather.

One of the most important recommendations is that the extensive work in meteorology, observation of terrestrial magnetism, study of solar and astrophysical problems, and aerial observations, hitherto carried on at Mount Weather, near Bluemont, Va., be discontinued, and that it be made a simple meteorological station for the taking of climatological records. The committee, in a complete report on the subject, found that the property at Mount Weather was purchased prior to 1903 and building operations begun early in the summer of that year. A committee of scientists from the bureau reported against the use of this property for aerial research in 1903, and within the past year other committees reported that solar radiation, upper-air research, and dynamic meteorology could better be carried on at other locations. For this reason the department has determined to discontinue the research work at this observatory and operate it simply for the taking of climatological records. This can be done by the man who will protect the property, at a total cost of about \$1,000 per year. This will make available approximately \$12,600, which can be expended to far greater advantage for scientific research.

Lines of Work.

The work of the Weather Bureau will be strengthened by increased attention to the matter of special crop warnings, designed to give growers of special crops an opportunity to take protective measures. This is particularly important for the southern fruit crops, which are subject to damage by unexpected frosts. The bureau will also develop its work of giving flood warnings to districts along waterways which are subject to sudden rises.

The forecasting and warnings service will be improved by the assignment of assistant forecasters to certain centers so that the evening forecasts for these districts can be made at the center.

The scientific work will include special attention to studies of storm, hurricane, frost, and cold waves, normal monthly storm tracts, the magnetics and thermodynamics of the atmosphere, solar radiation, quantity and quality of daylight, light intensity and sun and shade temperatures, temperature in relation to plant growth, evaporation, water requirements of crops, precipitation and snowfall, rivers and floods, and motions of the lower atmosphere—a study which is of growing importance, especially to aviators and engineers.

REORGANIZATION OF THE BUREAU OF STATISTICS (AGRICULTURAL FORECASTS).

It is proposed that the name of the Bureau of Statistics be changed to "Bureau of Agricultural Forecasts," as indicating more clearly the nature of its work. The figures compiled and published by the bureau are simply estimates or forecasts of crop prospects or production based upon the most careful use of all information attainable from thoroughly reliable sources. Much of the work of a purely statistical nature hitherto carried on by this bureau has now been assigned to other branches of the department or to other Federal departments to which it more properly belongs.

Cooperation with Post Office Department.

In the preparation of forecasts of production the department has entered into a cooperative arrangement with the Post Office Department which it is believed will make the figures of the estimates and forecasts still more reliable. Through this arrangement it is hoped that a system can be effectively inaugurated whereby the rural postmasters and rural route mail carriers will assist in collecting actual figures of total acreage and also gather complete figures of live stock.

Field Forecast Agents and Crop Specialists.

With a view to increasing the accuracy of its forecasts the bureau proposes to employ a number of specially qualified field forecast agents and crop specialists, to be obtained through rigid civil-service examination. The field forecast agents will be assigned to States in which agricultural production is not large and will spend their entire time in investigation of actual crop conditions within their territories. Crop specialists who have hitherto been used in gathering information on special crops, such as tobacco and cotton, will be employed to gather similar data on other important agricultural products. The system of collecting information through county, township, and individual voluntary correspondents will be retained, improved, and strengthened.

Simultaneous Publication of Forecasts.

It was found upon investigation that details of individual State forecasts must be in the hands of the farmer with the least possible

delay if he is to gain from them any advantage in the marketing of his own products. By simple and effective cooperation with the Weather Bureau this result has been achieved effectively and at a purely nominal cost. Under this plan the important details of forecasts for each State are telegraphed to the central weather station in that State. The weather station immediately prints copies of these figures, which show the forecast for that State compared with 10-year averages. The information is mailed without delay to all newspapers and agricultural and commercial publications within that State and reaches them within 24 hours, thus quickly reaching the actual producer. By this method the farmers in States distant from Washington get the State forecast, which, it has been found, is an even more important factor in the disposal of their products than the forecast of total production in the country, without the long delay which would follow if these State forecasts were mailed from Washington.

Committee of Cooperation.

In order to coordinate certain phases of the work of the Bureau of Agricultural Forecasts with other branches of the department, and also to prevent duplication of work and lack of harmony in statistical matters between the department and other Federal departments, a committee of cooperation has been established.

COOPERATION IN SOIL-SURVEY WORK.

With the view of making soil surveys more valuable to the farmer, a new basis of cooperation has been established with the States through their experiment stations, agricultural colleges, and agricultural bureaus. Under this plan the department will give precedence in conducting detailed soil surveys to those States which cooperate with the department in the matter and which request that such surveys be made. During the past year 19 States have appropriated money for soil surveys in cooperation with the department. If the request for soil surveys on the part of cooperating States absorbs all the department's funds for such work, no projects will be undertaken in noncooperating States. It is believed that where the soil surveys are made at the special request of the State agricultural agency and in districts where the State is actively engaged in extension work, the State authorities will be willing and able to help the farmer to gain the greatest possible benefit from the department's reports and soil-survey maps.

A second phase of cooperation in soil-survey matters has been the work of the department in limiting its so-called reconnoissance surveys largely to land classification of the national forests and to undeveloped areas of the country where detailed information is not immediately needed; work has been done in 10 States covering 30 projects.

COOPERATION IN LEGAL WORK.

Through cooperation with the Department of Justice arrangements have been effected during the year by the Solicitor for the more expeditious and economical handling of criminal cases and highly technical cases under the food and drugs act and the insecticide act. Hereafter the Solicitor will report criminal cases to the Department of Justice in the form of criminal informations, which, if approved by the United States attorneys, may be immediately filed. This will economize the time of the Department of Justice and expedite action in the courts. A similar system for handling all cases under the penal statutes committed to this department for administration will be recommended.

In the trial of the cases under these acts the points of issue frequently call for a complete understanding on the part of the legal representative of the Government of highly technical questions of chemistry and food or drug technology. The department therefore has made arrangements whereby in cases involving intricate technical questions the Solicitor and his assistants will assist the United States attorneys in the actual trials. In this way there will be placed at the disposal of the Department of Justice the more intimate knowledge which necessarily must be obtained by the Solicitor in preparation of the case than can be acquired by the United States attorneys through correspondence or in the restricted time at their command.

There is now under consideration a scheme of cooperation between the Department of the Interior and this department with respect to the handling of litigation involving claims to lands within the national forests, with a view to determining whether, and if so to what extent, there may be duplication of work. The ultimate purpose is to recommend such change in the procedure as may be necessary to eliminate such duplication.

CHANGES AFFECTING THE ENFORCEMENT OF THE FOOD AND DRUGS ACT.

Meats and Meat Food Products.

The decision of the Attorney General, and subsequent action by the Secretaries of the Treasury, Agriculture, and Commerce, in rescinding Regulation No. 39 placed meats and meat food products under the provisions of the food and drugs act, as well as under the meat-inspection law. Prior to that time meats and meat food products had been exempt from the operation of the so-called pure food law. Placing all these products under the provisions of this act called for the establishment of new machinery and certain reorganizations in the Bureau of Chemistry, and made necessary close cooperation between that bureau and the Bureau of Animal Industry. The general effect of the change was to give the Federal Gov-

ernment control over meat and meat food products in interstate commerce in all stages of their transit, instead of largely limiting their control to these products while they were actually within the jurisdiction of a federally inspected meat establishment.

Cooperation with the States.

It has long been recognized that inconsistencies between the food and drugs act and the food, drug, and dairy laws of the different States, as well as lack of uniformity in State legislation, have greatly hindered the prevention of fraud, adulteration, and misbranding in food and drugs and have made it difficult to induce manufacturers to improve their products. It is wasteful for the Federal food and drug authorities and the State authorities to work at cross purposes, and the department is making every endeavor to bring about effective cooperation. To this end, the Secretary invited all the State food and drug officials to attend a conference with representatives of the department to determine ways and means of bringing about better coordination of functions and closer cooperation. This conference was held on November 13 and 14 and attended by 23 food commissioners and 26 other State officials, representing 33 States, including Porto Rico and the District of Columbia. It was unanimously agreed by those attending the conference that effective cooperation was desirable, and agreements were reached as to specific measures which would aid in bringing this about. The conference made clear the necessity of establishing within the department an organization to be charged with the dissemination of information concerning the sanitary conditions of food production, violations of the law, new forms of sophistication, and new methods for their detection. The establishment of such an organization it is expected will do much to prevent duplication of research and investigation and make food and drug control far more effective. It is hoped also that with increased cooperation will come effective control through State agencies of conditions under which food factories manufacture their products, and better control of such foods as milk, eggs, oysters, and fish, which can be contaminated with micro-organisms and may communicate disease. Under the conditions of the Federal law the department can exercise no policing control over the actual factories and dairies, and detection of contamination resulting from unclean or undesirable conditions is most difficult in the finished product. Many of the measures recommended at the conference call for changes in existing Federal statutes, and the State officials have appointed a number of committees to prepare reports and practical suggestions as to measures that will tend to unify State and Federal work in this field.

Coordination in Inspection Work.

The effective administration of the food and drugs act has been hindered to some extent by the fact that the food and drugs laboratories and the food and drugs inspectors were acting independently of each other in the same territory. With two sets of absolutely independent officials in the same territory, each reporting directly to Washington, there could be little coordination. To avoid this, the United States will be divided into a few general inspection districts, each in charge of a competent official, and all laboratories and inspectors working in that territory will be under the same immediate direction. Certain of the smaller branch laboratories outside of Washington will be closed, because the same work can be done more economically and effectively in the larger laboratories, which have specializing chemists and more complete scientific equipment. The food and drug inspectors similarly will be grouped in the larger centers and will cover their territory by traveling from these centers.

Constructive Work.

This redivision also will make it possible for the different branch laboratories, instead of devoting their time almost wholly to the policing functions, to give attention to investigational work which has for its aim constructive improvement in the manufacture and handling of foods and the better use of agricultural products.

Special emphasis should be placed upon this constructive work and it should be the policy not merely to cause violators of the law to be punished, but to prevent the recurrence of violations by so perfecting processes of manufacture that only lawful products will reach the consumer. Saving of waste and economical utilization of products are becoming more and more important; the Government must conduct such investigations, since they are usually so costly that only the larger industrial corporations can undertake them independently. The results obtained by the Government are published for the use of all. The results of private investigation are either kept secret or patented and thus give an opportunity for monopoly. The constructive work in this way may be made to supplement the regulatory activity. Punishment under the law will become less and less frequent and necessary when the manufacturer has been taught how to send a safe product to market. The consumer will profit not only from the increased quality of the food but by the lessened cost of production.

Health and the Food and Drugs Act.

That the food and drugs act is purely economic in one phase and hygienic in the other is not always clearly understood. The wording of the act does not make this distinction clear. Thus, the word "adulteration" is used for the offense of substituting a less valuable though wholesome article in whole or in part for a more valu-

able one, and also for the addition of a deleterious substance to a food, or the sale of a food which is filthy and decomposed. Obviously the first is an offense against the consumer's pocket. The others may injure his health. In the past relatively more attention has been paid to the economic than the hygienic phase of the act. The most important hygienic task is the proper control of such foods as milk, eggs, oysters, and fish, which may communicate disease. In this connection, the cleanliness of food factories or sources of perishable foods which can become infected is most important. The department must combat unsatisfactory conditions in food sources mainly through education, and the policing function in the case of factories and dairies must be discharged largely by the States. It is believed, however, that the department can render assistance in encouraging the States to carry out this work for themselves.

Food and Drug Standards.

The establishment of legal standards for judging foods would render the food and drugs act more effective, less expensive in its administration, and supply needed legal criteria. Under present conditions it is necessary in the individual prosecution to establish by evidence a standard for each individual article. This procedure is very expensive, and sometimes its cost is out of proportion to its value. Moreover, it may result in lack of uniformity in different jurisdictions. With legal standards established, the control of foods would be more uniform and measurably less expensive. The lack of such standards is to-day one of the greatest difficulties in the administration of the food and drugs act. These standards, however, should be in the form of definitions, because numerical standards furnish recipes for sophistication. The standards, moreover, should be sufficiently flexible to permit improvements in production. Other serious limitations in the food and drugs act result from that act's definition of "drug." It is impossible to control cosmetics containing injurious drugs, and remedies for obesity and leanness or to prevent the use of wood alcohol in remedies for external application. The list of injurious drugs which must be declared upon the label is now limited, and authority should be given to require statements of other drugs and the new habit-forming or dangerous compounds which chemists are constantly producing.

FURTHER CHANGES IN ORGANIZATION NEEDED.

Still further changes in organization seem requisite. The Department of Agriculture, like other large institutions dealing with complex problems, has tended to develop into highly specialized groups, with somewhat arbitrary boundary lines, which have

been defined more by the methods employed than by the object sought. Such arbitrary divisional lines, separating branches of work aiming at a common result, produce a certain amount of jealousy and assumed conflict of interest and lost motion, leading eventually to stagnation. In the department it has become evident that existing divisional lines are beginning to militate against a desirable flexibility, and have in some cases allowed too little latitude in carrying out important projects. When in the past the department's work was on a purely divisional basis there was little need for coordination. This divisional basis was changed about 12 years ago into the present bureau system. The new plan for a time worked well, because the field was then a very broad one and was not covered fully by any single bureau or division. As the work has grown and different divisions have approached the same field definite handicaps have developed.

What is needed is a basic plan of cooperation, coordination, and broader grouping of the services of the department, according to the purposes in view, each with a larger number of small units, the development of a common feeling, and team work all along the line. Experience demonstrates that small units alone, each more or less interconnected with other units, will yield the greatest results, both in research and in its application.

To capitalize fully the results of research and to make the knowledge gained by the department of service to the people, the department manifestly must put itself in the best possible position to reach with its information the people who must change that information into productive action. To do this it must see that its policing or regulatory functions do not interfere with the gathering of its information, nor with the constructive rather than the preventive use of these data. It therefore must have a plan whereby not only friction is completely eliminated but whereby it is placed in a position to use to the fullest extent all outside agencies which can carry its information more directly to the people it seeks to serve. Probably this will best be accomplished by having in the department an organization involving five or six main groups, such as a research service, a rural organization service, a State relations service, a weather service, a forest service, a regulatory service, and others as new conditions or special occasion might warrant. With a view to the establishment of some such system the department in its estimates has submitted the following clause for the approval of the Congress:

The Secretary of Agriculture is hereby authorized and directed to prepare a plan for reorganizing, redirecting, and systematizing the work of the Department of Agriculture as the interests of economical and efficient administration may require; such plan shall be submitted to Congress in the Book of Esti-

mates for the fiscal year 1916; and the estimates of expenses of the Department of Agriculture for the fiscal year 1916 shall be prepared and submitted in accordance therewith.

NEW FIELDS OF WORK.

Heretofore the Department of Agriculture has, of necessity, concerned itself mainly with problems of production. It must give no less attention to these problems for a long time to come; they are still urgent. Increased tenancy, absentee ownership, soils still depleted and exploited, inadequate business methods, the relative failure to induce the great majority of farmers to apply existing agricultural knowledge, and the suggestions of dependence on foreign nations for food supplies warn us of our shortcomings and incite us to additional efforts to increase production.

The situation is one about which many have become pessimistic, but, of course, there is no ground for thinking that we have yet approximated the limit of our output from the soil. As a matter of fact, we have just begun to attack the problem; we have not even reached the end of the pioneering stage, and have only in a few localities developed conditions where reasonably full returns are secured. With a population of less than 95,000,000 living on more than 3,000,000 square miles it is unreasonable to speak as if our territory had been much more than pioneered. The population per square mile in the Union does not exceed 31, and ranges from seventenths of 1 in Nevada to 508 in Rhode Island. It is less than 76 per square mile in any State in the Union, except in eight eastern States and in Ohio and Illinois; less than 50 in any southern State; less than 43 in any State west of the Mississippi except Missouri; less than 25 in the great States like Texas, Washington, Nebraska, Oklahoma, Kansas, and California; less than 10 in the Dakotas, Oregon, and Colorado; and less than 5 in most of the Rocky Mountain Commonwealths.

Look at it from another point of view. According to the best statistics available it appears that the total arable land in the Union is approximately 935,000,000 acres; that only about 400,000,000 of this is included in farms and improved; that over 100,000,000 is unimproved and not included in farms; and the remainder is unimproved lands included in farms. But there is another thought. What about the efficiency of the work on the land now under cultivation? What part of it may be said to be reasonably, efficiently cultivated? What part of it is satisfactorily cultivated and is yielding reasonably full returns? The opportunity for guessing in this field is unlimited, but according to the best guesses I can secure, it appears that less than 40 per cent of the land is reasonably well cultivated and less than 12

per cent is yielding fairly full returns, or returns considerably above the average.

We have unmistakably reached the period where we must think and plan. We are suffering the penalty of too great ease of living and of making a living. It is not singular that we should find ourselves in our present plight. Recklessness and waste have been incident to our breathless conquest of a nation, and we have had our minds too exclusively directed to the establishment of industrial supremacy in the keen race for competition with foreign nations. We have been so bent on building up great industrial centers by every natural and artificial device that we have had little thought for the very foundations of our industrial existence.

Marketing.

In dealing with the problems of production, the department has directed its attention mainly to the problem of the individual farmer, and the broader economic problems of rural life have received relatively little attention. It is now becoming clear that we must definitely and aggressively approach these newer and, relatively speaking, urgent problems. We have been suddenly brought face to face with the fact that in many directions further production waits on better distribution and that the field of distribution presents problems which raise in very grave ways the simple issue of justice. That under existing conditions in many instances the farmer does not get what he should for his product; that the consumer is required to pay an unfair price; and that unnecessary burdens are imposed under the existing systems of distribution, there can be no question.

Just what part of the burden is due to lack of systematic planning, or inefficiency and economic waste, or to unfair manipulation, one can not say. As difficult as are the problems of production, they are relatively simple as compared with those of distribution, and there is danger not so much that nothing will be done, but that pressure will be brought to bear on the department to take action everywhere before it is prepared to act intelligently anywhere. The department has given assistance here and there in the past; it is prepared to give further assistance and information now, and it has shaped its projects and instituted more systematic investigations, which should have results of great practical value to individuals and to communities.

This extension of activity has been made under the act of Congress approved March 4, 1913, which confers the broad authority indicated:

To enable the Secretary of Agriculture to acquire and diffuse among the people of the United States useful information on subjects connected with the marketing and distribution of farm products.

Let us look at the matter briefly and consider some of the problems that must be attacked in this field. The department has arranged its marketing investigations under five important subdivisions:

First. Marketing surveys, methods and costs, including especially available market supplies in given production areas, demand at consuming centers, cold and other storages, marketing systems and prices, and costs of wholesale and retail distribution of farm products.

Second. Transportation and storage problems, having in mind the elimination of waste and the study of problems connected with surplus market supplies; terminal and transfer facilities, including freight congestion, car supply, deterioration in transit, extension of the practice of precooling of perishable products, and other special services.

Third. City marketing and distribution investigations, involving a study of the uses and limitations of farmers', municipal, wholesale, and retail market houses; systems of city distribution; the promotion of direct dealing between producers and consumers by parcel post, express, and freight.

Fourth. Study and promulgation of market grades and standards. A consideration of sizes and suitability of packages and containers, methods of preparation of perishable products, and the ultimate establishment, so far as practicable, of official market grades and standards for farm products.

Finally, cooperative production and marketing investigations. The department, as has been said, has already approached the field of marketing through various agencies. It has established standard cotton grades and has practically completed its standard corn grades. It has given much attention to cold-storage problems and to the packing and handling of perishable fruits. It is aware of the existing chaos and of the consequent wastes—waste resulting from faults on the part of the farmer in the growing and handling of his products; waste resulting from the machinery of distribution, including physical equipment and physical handling; waste resulting from the manipulation of those middle men who perform no clearly useful and necessary service; and waste resulting from ignorance on the part of the consumer and of the producer of the character of the product which is placed on the market. The producer of any product is entitled to receive an exact price for the specific product which he offers and the consumer is entitled to receive just the commodity he thinks he is paying for.

A failure in either direction involves clear injustice and greatly hampers production and crop improvement. Let me illustrate by reference to two vitally important crops—cotton and corn.

Several different standards of cotton classification are now in use. Some markets have adopted the official grades and use them. Others have adopted them, but do not trade on them. Liverpool has one set of grades, New York another. The former is a great market for both spots and futures; the latter almost purely a future market. Atlanta has its own grades; Augusta's are different. Savannah, handling largely the same character of cotton as the two foregoing, trades on Liverpool grades, using Liverpool middling as a basis. Atlanta middling is equal to Liverpool good middling. In other words, at the present time the same grade name is applied to two qualities that differ in market value as much as \$2.50 per bale.

The adoption and application of one uniform standard would result in a great simplification of all cotton transactions, doing away with the complex method of figuring buyer's limits. It would not be sufficient to have uniform grades, but the grade selected as the basis grade should be the same in all markets.

The local buyer knows the market cotton grades; the farmer does not. Too frequently the local buyer secures the cotton at practically a flat-rate basis on lower grades, grades the cotton himself, and sells it for what it is worth.

There is not only no incentive for placing a good product on the market, but as a matter of fact a penalty attaches to the cotton grower who takes the pains to improve his product.

Uniform standards throughout the cotton belt would result in the rapid building up of a body of common knowledge on the part of the farmers, students in agricultural colleges, and others interested in the universal set of grades. We might hope to educate cotton farmers in sufficient detail to enable them to use one set of grades, but it would be difficult, if not impossible, to teach them grading based on a number of diverse standards, as one can never tell to what market a given lot of cotton is to go. It would be necessary to have knowledge of practically all grades in use.

If in addition these grades were used on the exchanges and the terms of the contract employed were modified, many of the evils complained of by the producer and the consumer in the marketing of cotton would disappear.

Practically the same results would follow and the same evils would be removed if standard grades for corn were universally adopted. Definite standards for the grading of commercial corn and the uniform application of such standards in all markets under suitable Government supervision would be of direct value to our corn growers, in that such standardization would encourage the marketing of dry corn of better quality. Heretofore it has been the common practice to pay practically the same price for all corn delivered at country

stations, regardless of its water content or of its soundness. Farmers have not been slow to grasp the situation, and under such a system have naturally made but little effort to market corn in a dry and sound condition. The system has placed a premium on poor and careless farming at the expense of good farm methods and practices.

Under a definite system of grading and the elimination of such terms as "reasonably dry" and "reasonably clean," the farmer, as well as the grain dealer, will be able to know and fully understand the requirements for the different grades. With a knowledge of the grade requirements the farmer who markets dry corn of good quality will be in a position to demand a premium for such corn. It will not be necessary for him to accept a No. 4 price for corn which he sells under a grade designation of No. 3. He will then have some encouragement to exercise greater care in the harvesting, storing, and marketing of his corn; he can likewise ascertain in advance of sale with a fair degree of accuracy the grade of his corn while in the crib, and thus not market it until it is sufficiently dry to meet the requirements of a higher grade. The way will be open for real progress in the movement for the production of more corn of better quality, and farmers who grow corn primarily for market will have an incentive to grow earlier maturing varieties, which will contain less moisture when marketed and can be sold at a premium. Likewise, the country shipper will be in a position to pay a premium for good corn, in that he, in turn, will have the assurance of the same definite system of grading regardless of the market to which he ships.

Cooperation.

Several things stand out very clearly at this stage of our knowledge. All this waste must be eliminated. In simple justice the producer must be paid specifically for what he produces and for nothing else, and the consumer must receive what he thinks he purchases and must be willing to pay a fair price for a good product. It is clear that before the problems of marketing, the individual farmer, acting alone, is helpless. Nothing less than concerted action will suffice. Cooperation is essential. The same business sense and the same organizing genius which have placed this Nation in the front rank in industry must be invoked for agriculture. Reflection suggests this; experience demonstrates it. All the successful attempts in the marketing of any produce anywhere in the world have come through organized effort. The individual farmer has neither adequate information nor the facilities.

There are dangers here, of course. Cooperation can not result in an organization which shall attempt to establish a closed market and to fix prices. We shall doubtless condemn this as strictly in one field of industry as in any other and it would be as unnecessary as it would

be unfortunate. The aim should be an economic arrangement which shall facilitate production, lead the producer to standardize and to prepare his product for the market, and to find the readiest and best market for his product. Such action will result in gain to the producer as well as to the consumer. Furthermore, it is desirable that such concerted action shall proceed from below upward. It must concern itself with the overcoming of a specific economic difficulty in this field of production and distribution. It should associate itself with some particular product which is capable of being standardized. Experience shows that the best results are secured only when the members of such a cooperative society are those who are bona fide producers.

Many enterprises in the United States claiming to be of a cooperative nature have existed and do exist. They are of all sorts and descriptions; some are truly cooperative, others are clearly exploited. Some operate on principles that are sound; others on principles that are obviously bad. A form helpful to one undertaking is not necessarily the best for another, and one successful in one community under certain conditions can not necessarily be expected to succeed under other conditions in another community.

Here, again, the need is for information, and the department, acting in cooperation with the General Education Board, has devised machinery and instituted investigations into this field of cooperative effort at home and abroad. There are many facts to be ascertained. We desire to know and to estimate the various sorts of enterprises afoot in order to be able to give the people information concerning the principles and practices of the best forms of cooperation.

At the earliest practicable moment the department will disseminate the information, and if circumstances warrant and funds are available will assist in making such demonstrations as may be practicable.

Rural Credits.

There is a general impression that our financial arrangements do not satisfactorily cover the rural communities and that there is need of better credit arrangements for farmers. The interest is widespread. It is manifested in many letters received at the department, by articles in periodicals, by the action of various States, and by the thought of Congress in providing for a commission of inquiry abroad. It is significant that the commission provided for by Congress was accompanied by delegates from practically every section of the Union. The results of the inquiries of this commission are not yet published, but they will doubtless be available in the very near future. For a long time economists have known of the foreign arrangements, but their writings have reached comparatively few people. The report of the commission and the public interest in

its trip abroad will give wide publicity to its findings. It was apparent to the department that a knowledge of foreign arrangements should be supplemented by a study of home conditions, and through cooperation with the General Education Board a survey of home conditions was undertaken, and much valuable information has been secured.

It is clear that conditions vary widely in the United States, that farmers do not equally need better credit arrangements, and that all sections are not similarly circumstanced. In fact, from some sections comes requests not so much for capital at lower rates as for information as to how to invest capital.

There is considerable variation of the interest paid by farmers on long and short time loans, both as among States and as among different sections in the same area. In the older States of the corn belt, such as Iowa and Illinois, the usual rate on farm-mortgage loans appears to average a little over $5\frac{1}{2}$ per cent, whereas in such States as Montana, Colorado, and Oklahoma in the West, and Florida in the South, the annual charge on similar loans appears to be $8\frac{1}{2}$ per cent or more. Similar variation is apparent in rates to farmers on short-time loans on personal or collateral security. These vary from an average of less than 7 per cent in States like Illinois to an average rate of 11 per cent or more in Oklahoma, Colorado, and Montana. Furthermore, the interest on long-time loans in northern Minnesota exceeds by 3 per cent the usual charge in southern Minnesota. In States like Illinois, where the conditions are more uniform, the variation is slight, ranging from $5\frac{1}{2}$ to 6 per cent between northern and southern Illinois. In the case of short-time loans there are greater variations, ranging from $8\frac{1}{2}$ to $14\frac{1}{2}$ per cent or more in Colorado and Oklahoma and from $6\frac{1}{2}$ to about 8 per cent in Illinois.

It is not easy to explain just how these variations arise or to decide whether we may more nearly equalize the opportunities for credit in the various sections, and if so, how. There is no one single complete explanation. Many factors enter: Climatic conditions, soil conditions, stability of industry, methods of farming, distances from markets, distances from centers of large wealth, and the nature of financial agencies through which capital is secured all play a part in determining the availability of capital and the rate of interest.

But when all necessary allowance has been made for these fundamental factors, the fact remains that the rural communities are not as efficiently served as they should be by existing financial arrangements. It is not improbable that they can not be as completely served as urban communities are, but improvements can be made. Certain provisions of the pending currency bill have been inserted with the definite view of remedying the defects. What further action

should be taken presents a difficult and complex problem. Whether the legislation should be exclusively State or exclusively Federal, or partly State and partly Federal, and whether different agencies should be devised to meet the demand for short-time and for long-time loans are some of the points to be decided.

Long-time loans are needed for permanent investments, such as the purchase price of a farm or for the erection of buildings. In this country the usual method employed in securing capital for such purposes is through farm mortgages. Abroad, in France and Germany, separate financial machinery by means of which capital is rendered available at low rates for permanent purposes has been devised. Bankers in this country realize the wisdom of giving definite encouragement to farmers who borrow money for productive improvements, and the farmer realizes the importance of securing capital for such purposes. Here is presented one of the important problems in connection with rural credits, in some respects the most important. It is wise economy to encourage the extension of credit for safe productive use, and no less wise to discourage the use of capital along nonproductive or speculative lines. There is no doubt that much capital has been wasted through misdirection and much consequent difficulty presented in the projection of a new scheme. The need of encouraging the placing of capital in the hands of the farmers at reasonable rates for productive purposes is made evident by the rapid increase of tenancy in various sections. We no longer have abundant free homesteads that afford farms and homes for immigrants as in the earlier days. The rapid increase in farm values and the difficulties in securing land have given impetus to the growth of the renting system. It is this tendency especially that suggests the importance of devising farm loans on terms such as will enable the producers to make the necessary payments on the interest and principal, so far as possible, from the returns of the land itself. The plan of issuing farm debentures has been advocated where the bond issues are blanketed on farm mortgages, and where the latter are issued for long periods of time, running from 10 to 60 years, with the amortization feature attached. Such a plan has operated with success abroad. Some organizations in this country have met with apparent success in this direction. A land-mortgage bank organized as a private-stock company and embodying features of the French Credit Foncier has been operated for some time in Illinois. This company lends money on farm mortgages and issues debentures which are sold to the investing public. The plan most in use by it is to have each thousand-dollar mortgage carry a uniform semiannual payment of \$43.26, which covers 6 per cent for interest and enough on the principal to extinguish the loan in 20 years. Each loan is

limited to 50 per cent of the value of the farm, and all mortgages are restricted to lands within the State. It would appear that this plan can probably be used safely only where farming has reached a stage of relative permanency and where the conditions are fairly uniform. Under other conditions the investing world may not be willing to look with favor upon blanket debentures unless the financial standing of the institution issuing the securities inspires great confidence. In such regions investors appear to prefer a direct lien on the specific farms regarding which they possess definite information, and here the problem becomes one of directing effort toward the widening of the market for such mortgages by providing for their resale and repurchase through well-organized and responsible agencies.

In addition to this improvement in facilities for long-time loans through the widening of the market for farm securities, there is another line of effort which may yield favorable results in improving credit conditions. This will involve the drawing more effectively on existing local capital through better opportunities of investment. An interesting example is the familiar building and loan association. The activities of such associations in urban communities are well known. Attempts have been made so to modify such organizations as to adapt them to the needs of the farmers. This is true especially in Ohio, where there are 650 building and loan associations, of which more than 500 furnish loans to farmers aggregating more than \$12,000,000. These are found in 82 out of 88 counties in the State. In each of the 82 counties these associations extend loans to farmers at a usual rate of 6 per cent. The loan contracts are reported by the State department as varying from 1 to 16 years, but in nearly all instances the farmers prefer 2 to 5 year contracts with interest payable quarterly or semiannually. This experience may suggest that there is opportunity for the formation of farmers' associations that will stimulate thrift, mobilize local capital, and tend to the increase of owned farms.

What has been stated is, of course, tentative, and is not intended by any means to exhaust the subject. Enough has been said to emphasize the thought that the improvement of rural credit facilities may be solved through several approaches and not by any single agency, and that the full solution of the problem involves the general improvement of agricultural conditions, greater permanency, and greater uniformity.

The second problem is how to improve conditions under which farmers may get short-time loans. Here again we encounter special conditions and special needs. All sections again are not equally circumstanced. The small farmer with little credit, or the farmer

who is just getting himself established, is the one to whom attention would naturally be directed. The operations of many of them, taken singly, are too small to engage the attention of those who have capital to lend, and in many cases the situation is so precarious as to prevent favorable consideration of requests for loans.

It is, of course, requisite that a credit foundation exist; that there should be the usual combination of character and security, but even where these conditions are satisfied the situation is still unsatisfactory. The suggestion of the formation of farmers' credit unions merits serious consideration. The aim of such organizations is not to supply a new banking system but rather to establish a credit foundation or to utilize a collective good will which does not exist so long as the farmer acts individually. In this field Europe has developed beyond us. To what extent their institutions can be followed here needs serious study. It is probable that the unlimited liability feature of some of their schemes will not appeal to American farmers in most sections of the Union. Nevertheless, in those parts of the country where the system of merchants' advances to farmers has brought a great many borrowers into the relation where their individual liabilities to the lenders is already unlimited, it would not seem to be revolutionary to encourage the establishment of local cooperative credit societies and to transfer the features of unlimited liability of the borrower to a group of producers.

The main thing is to develop, either through individual or group action, a credit foundation and a form of security which will attract existing capital, partly perhaps through existing agencies.

In taking action in this field of rural credits it would seem desirable that we bear certain guiding principles in mind. There does not seem to be any real demand or need for action which would do more than provide as adequate financial machinery for the rural districts within practicable limits as is provided for other sections. There does not appear to be need for unique legislation or for legislation which shall aim to give the farmer credit on easier terms than other members of society secure. What is needed is the creation of conditions and machinery which shall enable him on similar credit foundations to secure money at the same rates as those that prevail for other classes. Present conditions do not seem to justify proposals to give any class of people capital provided by all the people through any device at lower rates of interest than economic conditions normally require or than those at which other classes secure it under similar conditions. Certainly the American farmers themselves will examine every method of improvement suggested within the fields of self-help before seeking special provision for agricultural industry through national loans or other devices.

Other Rural Organization Problems.

Even though the problem of how the farmer can best sell his produce and can improve the conditions under which he can secure the necessary capital were solved, there would still remain vital things to be accomplished before rural life can be made fully efficient, profitable, healthful, pleasurable, and attractive, and before a larger disposition to remain on the farm develops. Good roads are prerequisite for better marketing, for better schools, and for more comfortable rural living. Better sanitation and hygiene in the home, in the school, and in the community are just as vital for the rural community as for the urban. Many agencies are attacking these problems. It is highly important that the local political machinery shall be more fully vitalized and become more efficient in its care of community welfare.

Much of the work of the improvement of rural conditions lies outside the field of immediate effort of the Department of Agriculture, but it is attacking directly more of these problems than is commonly recognized and will leave nothing undone to contribute directly to their solution. It is clear that much time and great patience are essential and that some of the results desired will come early in the future, many of them as by-products of the work of the various agencies.

The department is giving special attention to the subject of farm management with the view of rendering to the farmer service similar to that rendered to the business man and the manufacturer by efficiency experts and engineers.

It is proposed especially to emphasize the enforcement of the food and drugs act, so far as the law permits, for the better protection of all the people, rural as well as urban. Much of this work must of necessity take the form of constructive education; that is, of placing in the hands of the people and of their officials information necessary for protection, and of giving them cooperative assistance.

This work could be very much extended if the States, in addition to efficient, well-organized State health boards, had machinery extending into each community in charge of full-time experts.

An intimation of the work the department is doing to protect health may be conveyed by reference to its study of insects which carry disease throughout the country.

Relation of Insects to Health.

In the case of a number of these insect pests, they intimately affect agriculture. A striking example is malaria, which prevents the proper agricultural development of enormous areas of fertile land in the United States and greatly reduces the efficiency of plantation labor. The work regarding malarial mosquitoes carried on during

the year consists in determining the insect losses which occur and the formulation of plans of control suitable for plantation conditions.

The house fly, known to carry typhoid fever and other diseases of men, has been studied for some time. Recently this study has centered on the discovery of effective and economical methods of destroying flies in their breeding places. The chief breeding place of the fly is the manure heap, and it has been realized that a method must be discovered which will kill the fly and yet not lessen the value of the fertilizer. Satisfactory progress has been made, and an announcement concerning new methods probably will be issued before the end of the year. An investigation of the stable fly, which is an important enemy of live stock and also is suspected of carrying infantile paralysis and other diseases, has been in progress. Studies have been made of the Rocky Mountain spotted-fever tick, with a view to the eradication of this pest in a locality in Montana where an especially virulent phase of the disease existed. Still another investigation had to do with the possibility that pellagra is transmitted by insects. This has not yet been demonstrated. If insect transmission is proven, however, another important malady will be added to the list of those which may best be dealt with by controlling the insect carrier.

THE WOMAN ON THE FARM.

The woman on the farm is a most important economic factor in agriculture. Her domestic work undoubtedly has a direct bearing on the efficiency of the field workers, her handling of the home and its surroundings contributes to the cash intake, and, in addition, hers is largely the responsibility for contributing the social and other features which make farm life satisfactory and pleasurable. On her rests largely the moral and mental development of the children, and on her attitude depends in great part the important question of whether the succeeding generation will continue to farm or will seek the allurements of life in the cities.

According to the testimony of many who are thoroughly familiar with conditions, the needs of the farm woman have been largely overlooked by existing agricultural agencies. Endeavor has been largely focused on inducing the field workers to install effective agricultural machinery and to employ the best methods of crop production. The facts that the woman's work and time have a real monetary value and that her strength is not unlimited have not been given the consideration they deserve. As a result, on many farms where there is always money enough to buy the latest agricultural appliance there is seldom a surplus to provide the woman in her productive work with power machinery that will lighten her physical labor, running water that

will relieve her of the burden of carrying from the pump all water used in the household, or kitchen equipment and household devices that will save her time, increase her efficiency, and enable her to make important monetary saving.

Home Management.

The department believes that intelligent help to women in matters of home management will contribute directly to the agricultural success of the farm. It purposes, therefore, to ask Congress for means and authority to make more complete studies of domestic conditions on the farm, to experiment with labor-saving devices and methods, and to study completely the question of practical sanitation and hygienic protection for the farm family.

The farmer's wife rarely has access to the cities where labor-saving devices are on competitive exhibit, nor does she often meet with other women who are trying these devices and gain from them first-hand information. It seems important, therefore, that the department, cooperating with the proper State institutions, should be ready to give the farm home practical advice. Some work has already been accomplished in studying the problems of nutrition and advising the women in the country as to the economical use of various foods and methods of using these foods to obtain variety in diet. Apparently there is need also for advice on general diets that will be healthful and varied, because the farm home usually has but a limited number of foods at its disposal and has not the opportunity to add novelties to the diet, such as the city woman finds in her convenient store.

Fields in Which Help Is Desired.

To ascertain the fields in which farm women desire specific assistance, a letter of inquiry was addressed to the housewives of 55,000 progressive farmers in all the counties of the United States. This letter asked no questions and left every woman free to discuss any need which occurred to her. She was invited to take the matter up with her neighbors and make a reply which represented not merely her personal need but the recognized need of the women of her community. Replies to this letter have been received in great numbers. Time has been lacking for a complete analysis of these letters, but from those which have been read so far it is evident that women want help in practically every phase of home management, from the rearing and care of children to methods of getting the heavy work, such as washing, done by cooperative agencies. Many women seek means of increasing the precious personal income which they receive from poultry, butter making, or the garden in their care. Many asked the department to suggest new handicrafts or gainful home occupations, and others seek better means of marketing the preserves, cakes, or fancywork that they now produce.

The overwork of farm women and their fear of the effect of overwork on their children is the text of many of these letters. The difficulty of securing domestic help, due seemingly to the fact that daughters of farmers no longer take positions as home makers, has added to the farm housekeeper's burden. Many ask the department to prove to the men that their work is worth something in dollars and cents. Still others express a realization that their own lot is hopeless and self-sacrificingly ask that better things in the way of education, cheaper schoolbooks, improved schools, lectures, libraries, and amusements be provided for their children. Many request that the department establish a woman's bureau, issue weekly or other publications designed for women and dealing with matters of cooking, clothing, home furnishing, education of children, care of the sick, etc.

POPULARIZING THE DEPARTMENT'S WORK.

The realization that information of great value to the people is being gathered by the department's specialists more rapidly than it could be circulated led to a revision of the system of publication and to the establishment of a special information service.

New Classification of Publications.

It is fully realized by the department that the printed page or written statement, or even the institute address, can never be as effective in getting the farmer to understand and adopt practical methods as the man-to-man cooperative work of the demonstration service. Unfortunately, however, it is impossible at present to reach every farmer even once a year by word of mouth, and it will always be impossible to send direct messages to him to communicate new discoveries without delay. In planning the new system of publications and the information service the aim has been to reach with the least delay the largest possible number with the printed message and to place it in their hands in a form which will approximate as nearly as possible the work of the demonstration agent.

Accordingly, on July 1, 1913, a new plan of publication work was adopted, constituting a decided change in the character and classification of the department's publications, the object being to draw a sharp line between the strictly scientific and popular publications, so as to prevent the waste arising from the miscellaneous distribution of the scientific bulletins and to make a wiser distribution of the popular publications. The confusion which has always existed as the result of a multiplicity of series of publications has been eliminated, so that instead of having no less than 40 different series there are at present but 4, namely, (1) departmental bulletins, in which the popular and semitechnical results of investigations are published, and of which 50 have already been issued; (2) the serial publications

(including the Journal of Agricultural Research, for the strictly scientific papers, and the Experiment Station Record); (3) the Farmers' Bulletins, which are to be reduced in size and designed to give specific directions for doing things, with the object of making them more popular and useful; and (4) annual reports and other congressional publications, including the Yearbook and Soil Surveys, all of which are to be reduced in size and made more readable.

The demand for information which the people have a right to obtain from the department was never as great as it is to-day, and the new classification affords an economical and satisfactory way of meeting the requirements of all who are interested in our work.

Information for the People.

The edition of any single bulletin or publication necessarily is limited, and in consequence can reach but a small percentage of the population that could make use of it. In addition, it was found that there was much valuable material which, to be useful, ought to be gotten into the hands of the people within a few days or hours, and which if subjected to the necessary delay of formal printing would be of little service. The Office of Information was therefore established for the purpose of preparing brief popular statements of facts, which are to be supplied to the country. This office gathers these facts from the printed material and from the typewritten report and by direct interview with the specialists. This material is then prepared in simple news form, mimeographed, and given to the papers, particularly in the special districts to which it applies. It is also issued in the form of a weekly letter which is sent to more than 50,000 crop correspondents and progressive farmers. The notice may take the form of warnings against fraud in seeds and foods, notices of quarantine against plants or animals, advice as to means of combating crop or animal pests, or general information as to the handling of various crops. The various publications to which they are sent apparently are finding that these notices are of interest and value to their readers. The material sent out by this office is limited entirely to making known the facts of discovery and the official rulings of the department.

RELATIONS WITH THE STATE AGRICULTURAL INSTITUTIONS.

Reference has been made to proposed changes in legislation making for closer relations with agricultural institutions within the States, especially the agricultural colleges and experiment stations. It is self-evident that no very sharp line of distinction can be drawn between the functions of the Federal Government and those of the agricultural colleges and stations.

Certain guiding principles, however, may be proposed, and if these are observed there need be no fear of conflict. As might be expected in a country growing as rapidly as ours, where conditions affecting agriculture are so changeable, relations between the institutions within the States and between the State institutions and the Federal department have not always been as satisfactory as might be desired. As the work progresses it becomes more and more evident that the Department of Agriculture has well-defined functions, such as those controlling regulatory matters where interstate commerce is concerned, broad questions of administration affecting the conservation of soils, waters, and forests, studies of meteorology in its relation to commerce, and other problems of this nature. The Federal Government is also concerned with research problems, especially those affecting regulatory matters and the broader administrative questions already discussed. Its research work, therefore, should lie in regional rather than in local fields. The Federal Government accumulates a large amount of information which it should place in the hands of the people, especially the people on the farms and in the farm homes. The States are concerned with educational matters, with research, and with the extension of the results of research.

COORDINATION OF ACTIVITIES.

As the Federal Government makes appropriations for this type of work within the States and is also making appropriations to the Federal department direct, it is proper that all the agencies coordinate their activities in such fashion as will bring the best results and preserve the integrity of the institutions involved. Unquestionably these relations can be brought about without compulsion of law. They may be accomplished voluntarily by the men in the various institutions directing the work.

In order that a proper understanding of relations might be secured, several conferences have been held with the executive committee of the Association of Agricultural Colleges and Experiment Stations. As a result of these conferences there developed certain views which have been formulated in the following memorandum. This memorandum was signed by all the members of the executive committee and was approved by me.

The executive committee of the Association of American Agricultural Colleges and Experiment Stations desires to express to the honorable Secretary of Agriculture its great gratification at the attitude of his department in its effort to bring about a closer and more efficient relationship between the work of the department and that of the colleges and experiment stations.

(1) The executive committee heartily indorses the suggestion of the Secretary that as a means of inaugurating and perpetuating an intelligent and sympathetic cooperation of these agencies, there be established a permanent com-

mittee on the general relations of the department and the colleges, said committee to be made up of representatives from both the department and the association.

RESEARCH.

(1) The executive committee cordially agrees with the point of view of the Secretary that the primary function of the Federal department is to undertake the study of problems that are more particularly regional, interstate, and international in character, and that upon the stations should rest the responsibility of investigating the problems that arise within their respective States.

This general policy is not to debar a union of effort by the department and a given station in the study of a problem whenever it becomes evident that such cooperation is necessary or will tend to a more successful outcome.

(2) Whenever the department finds it desirable to study a problem within a given State, harmonious relations and an intelligent understanding would undoubtedly be promoted by a consultation between the department and the State's station prior to its inauguration. In case a station is unable to cooperate in the work or does not desire to do so, it should lend sympathetic and advisory support.

(3) Unqualified approval is given to the proposal of the Secretary that in order to assist in the carrying out of the policy of cooperation there be organized a joint committee on correlation of research, to be made up of representatives from the department and the college and station association, one function of said committee to be the preparation for early publication by the department of a list of scientific projects to be undertaken by both the department and the stations. This committee should also be empowered to assist in any feasible way in correlating the work of the National and State research agencies in such manner as shall promote efficiency in securing results.

(4) Equally emphatic approval is given to the plan of holding group conferences between the scientific specialists of the department and the stations. It would seem desirable and perhaps necessary that owing to financial conditions within the association and stations the necessary expenses of such conferences should be met from a fund administered by the department.

(5) It seems to be mutually agreed that in order to make available to students of science the research work of the department and stations and to promote its standing in the scientific world there should be published by the department a journal of agricultural research, such journal to contain only those contributions from the department and stations as are viséed by the committee selected for that purpose.

EXTENSION.

The executive committee approves the policy of unifying the administration of the extension service and is desirous of assisting in securing Federal legislation to that end on the basis of the following principles and conditions:

(a) That the extension service shall be administered wholly under the immediate direction of the college of agriculture. State leaders of extension service shall be appointed by said colleges and shall be recognized as college officials.

(b) That extension-service projects maintained by Federal funds shall be entered upon only after mutual approval by the department and the colleges.

(c) That the funds to be applied to the maintenance of the extension service shall be secured through congressional appropriations made to the Federal department, to be distributed to the several States as provided by law, on the basis of the fundamental provisions embodied in the Lever bill (H. R. 1692).

(d) It is understood that the appropriations made for extension service by the several States shall be under their control.

(e) It is further understood that the (Federal) moneys appropriated to extension service shall all be expended under the plans and agreements mutually approved by the department and colleges, and that no outside cooperative arrangement for maintaining extension service shall be made with any corporation or commercial body, excepting as a corporation or commercial body may wish to donate funds to be administered in extension service exclusively by the colleges of agriculture in consultation with the department.

Carrying out the recommendations set forth in this memorandum, steps have been taken to organize several committees. The purpose of these committees will be to bring about closer relations with the State institutions and the department.

There will be a committee on relations, a committee on projects and correlation of work, and a committee on publication of research.

As a further result of the conferences and memorandum, the principles set forth with reference to extension have been embodied in a bill providing for such work, which was introduced by the Hon. Hoke Smith in the Senate and the Hon. Asbury F. Lever in the House. This bill, it is believed, will furnish the necessary machinery for bringing about the closest relationship between the department and the several States in the matter of extension service. It will enable the department to coordinate more clearly its work and so to handle it as to have the agricultural colleges as the means by which it is conducted.

PROPER ADMINISTRATION OF HATCH AND ADAMS ACTS.

In connection with the administration of the Hatch and Adams Acts, attention is called to another important matter which should have consideration. Efficient station work demands an atmosphere of fairness and justice and reasonable security to the staff. It furthermore requires stability of policy and the highest possible measure of continuity in work and in personnel. Money spent on discontinued or interrupted projects is usually very largely wasted. The director of the station, as the guiding head, is mainly responsible for the success of the station. A good station and a good director go together. The station director deserves to be sustained and supported by the governing board in carrying out the general policy after it is approved by them. A change in the director is inevitably a temporary shock to the work, often interrupts projects, causes changes in the policy and personnel, and creates an era of uncertainty; hence, a change is not justified except when clearly indicated by incompetence or inability. In the discharge of its functions in administering the Federal funds and in seeing that they are properly used, the Department of Agriculture should not fail to take cognizance of so important and vital a change as that of director.

The Adams Act directs that the Secretary of Agriculture shall each year ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is complying with the provisions of this act and is entitled to receive a share of the annual appropriation. It authorizes the Secretary to withhold certification, thus suspending payment, and to report the matter to Congress. While the right of the colleges to direct the stations within their States and select the members of the station staff is recognized, radical changes in the personnel or policy of the station, except for good and valid reasons, should, it is believed, be held to be unwarranted interference of the governing board with the conduct of the station. Such action fails to recognize the cardinal principles of efficient administration and places an institution in a position of inability to properly employ the Federal funds. It is believed that such a condition does not warrant the Federal Government in continuing to advance funds to the college or its experiment station, and should lead to the withholding of funds until conditions favorable to their effective use are restored.

REVIEW OF ESTABLISHED WORK.

ADMINISTRATION OF THE NATIONAL FORESTS.

The largest task of the department in forestry is the administration of the national forests. The department is also developing the science of forestry and getting it into actual practice on private as well as public lands. This is being accomplished through demonstration of practical forestry on the national forests, cooperation with States in developing State forest organizations and assistance to States in protection of forests on the headwaters of navigable rivers, experimental work to determine the best methods of forestry, research in problems of utilization of forest products and saving of waste, and general educational work.

The primary objects of the national forests are to protect the public timber, to produce a continuous supply of timber on lands not required for agriculture, and to protect the sources of water used for navigation, irrigation, water power, domestic supplies, and other purposes.

Classification of Forests.

The department is classifying the national forest lands to segregate those chiefly valuable for agriculture and to establish permanent boundaries of the areas required for the production of timber and for water protection. Every consideration, not only of development of the States but of protecting and increasing the use of the resources of the forests, makes it desirable to further the agricultural development of land in the forests suited to farming.

The department is making rapid progress in the classification work and aims to segregate the larger bodies of agricultural land within two years. At the same time the establishment of the permanent boundaries of the areas to be used for forest production and protection of watersheds will enable the concentration of the expenditures in protection, improvements, and reforestation where they will yield permanent results.

Similar work should be done outside the national forests. Public lands valuable only for forest purposes—that is, for growing timber and protecting water flow—are now exposed to fire and trespass and often endanger the forests under protection. Legislation is called for to provide that these lands be classified and added to the national forests.

Business Aspects.

In administering the national forests the department is handling a very large business enterprise. The forests will be made self-supporting as rapidly as possible. Earnings are increasing. The increase for 1913 over 1912 was over \$300,000, or 15 per cent. Many forests already return more than their operating cost, and their number will rapidly grow under the present vigorous timber-sale policy. Most of the timber is still far from a market, often requiring the construction of from 20 to 75 miles of railroad by purchasers. With improved conditions the heavily timbered forests will soon yield returns sufficient to meet the deficit on forests held primarily for watershed protection.

Fire Protection.

The first great task is to protect the forests from injury and destruction by fire. The inflammability of the forests, the long dry seasons, the lack of means of transportation and communication, and the carelessness of many individuals make this work peculiarly difficult. From 2,000 to 3,000 fires a year are started on the forests. Our efforts must be to reduce the number by removing all preventable causes of fire, and to be equipped to handle promptly every fire that starts. The timber alone is worth about \$1,000,000,000. The money spent on protection, a little over 2 cents an acre, is cheap insurance.

The Timber Policy.

The national forests must be made to grow all the timber that they can; they must supply the needs of the public at as low cost to the public as possible; and they must be so managed as to protect the public against timber monopoly through private control of stumpage or of the manufacture of lumber.

Full production means that lands now unstocked or partially stocked must be reforested and that those now covered by a mature

stand must be cut over, with provision for the starting of a new crop. The most pressing immediate need is, next to fire protection, which both safeguards the present stand and promotes reforestation on a great scale, the working over of forests where most of the crop is ripe. Sales of timber are being aggressively pushed and the cut is rising yearly. The timber is sold on terms and conditions which safeguard the public against the evils of speculation and monopoly. Full value for the public timber sold for commercial use is obtained and must be obtained if the Government is not to subsidize those business enterprises which buy the timber.

The Grazing Policy.

The objects of regulated use of the range for grazing are full use of the resource without injury to timber growth and water flow, the encouragement of the live-stock industry, and healthy upbuilding of the West through widely diffused participation in the range privilege by small owners. The success which has been attained in restoring the productivity of ranges depleted by the unregulated competition of former days, in working out methods of use satisfactory both to the stock industry and to the public, in making new range available and learning how to use all kinds of range to best advantage, and in developing the industry along lines which contribute to home building and diffuse prosperity shows what true conservation means.

Water Power.

There are very great power possibilities within the national forests. Already there are 76 developed projects and 30 under construction. As the market for power increases there will be a much greater demand than at present, and the Government should make the power sites available under terms which will not only encourage the investment of capital but fully insure the interests of the public. The chief defect of the present law, under which the department is working, is the statutory provision permitting the granting only of a revocable franchise. This law should be changed to allow for the use of land for power purposes, with such provisions as may be needed to protect the investor and the using public.

Miscellaneous Uses.

No use of the forests by the public should be refused if some more important use is not at stake. On the contrary, these 167,000,000 acres of our country should be made to yield the largest net total of benefits that can be got out of them. The land can be occupied and is being occupied for a great variety of purposes by a multitude of individuals. When the object sought involves an exclusive privilege, a special-use permit is issued. More than 15,000 such permits are in force. A vastly greater number of persons visit the forests

for purposes which require no permit, such as camping, fishing, hunting, prospecting, and similar objects. The number of such persons last year exceeded 1,500,000.

Recreational use of the forests is already of very great importance, and will be much greater a few years hence than it is now. The value of the forests as playgrounds must be recognized and so provided for that the public will always find full opportunity open for such use. To the extent that the law permits, this is being done. Full development of recreation use calls for legislation to permit the department to grant term permits for the occupancy of land for the construction of hotels, summer cottages, and similar purposes, as permits may now be granted for the development of mineral springs.

Recreation use of the forests must be surrounded with safeguards to keep the water supplies of cities uncontaminated, and must be controlled to the extent which the preservation of natural beauty against vandalism and unsightly conditions involves. As public playgrounds the national forests will increasingly have a value for the people of the country, the importance of which it is impossible to overstate. As protectors of water supplies for domestic use their value will also steadily rise. Already over 1,200 cities and towns draw their supplies from national forest watersheds. Protection both of regularity and of purity of such supplies is an imperative public duty. There is lacking at present adequate authority to prevent water contamination by campers, prospectors, and others. Legislation to enable the department to cooperate with cities and towns in safeguarding the public health through sanitary regulation of the use of watersheds is an urgent need.

IMPROVED HIGHWAYS.

There has been a steady movement for better roads during the past 20 years, with the result that to-day about 24 States have highway commissions or some other State highway agency. A few of these are engaged in educational work, but most of them are expending State money in the construction and maintenance of roads. So rapid has been the growth of this work that, while the total annual expenditure of the States for this purpose amounted to but \$2,000,000 10 years ago, it has grown to \$43,000,000 in 1912. The results are in evidence in the form of thousands of miles of well-constructed roads in the States which have been most liberal in providing State funds, in a higher standard of supervision, and in more strict accounting for the financial handling of the work.

Federal Aid in Road Building.

With the growing interest in road construction and road maintenance it becomes evident that the relation of the Federal Govern-

ment to this work should be defined. It is believed that the Federal Government should take the lead in investigational and experimental work, having for its object the securing of facts necessary for the most economical methods of road building and road maintenance under the widely varying conditions existing in the United States. There is need for a central agency which can do the highest type of investigational work and can furnish the best information on all problems of road construction and road maintenance—an agency, in short, which shall be able to say the last word on matters pertaining to the construction and maintenance of roads and to road administration. The department has laboratories for testing and research work, issues numerous publications of an educational character, and employs a group of the best highway and engineer experts obtainable. It has actively aided the States and communities with suggestions or advice and has made demonstrations of its methods as opportunity has offered. The function of the department has heretofore been primarily educational, and as such it has been recognized to be of great value.

Improvement of Post Roads.

Recently Congress took a step of great importance and significance. Under conditions specified it made an appropriation of a half million dollars, "to be expended by the Secretary of Agriculture in cooperation with the Postmaster General in improving the condition of roads to be selected by them over which rural delivery is or may hereafter be established," and provided that such improvements should be made under the supervision of the Secretary of Agriculture. It made this appropriation contingent on the appropriation of double the amount of money for such improvement by the State or the local subdivision thereof in which such improvement was to be made. As the regular appropriation for the Office of Public Roads is approximately \$300,000, it will be seen that the Department of Agriculture has been charged with the supervision of an expenditure for roads of about one and three-quarter million dollars. The time has been too short to determine fully the value of the experiment authorized by Congress, and it has been recommended that it be continued with an increased appropriation.

Cooperation With the States.

The principle of cooperation with the States embodied in the action of Congress referred to is undoubtedly a helpful and wise one. It has heretofore characterized the relations of the department with the States in its educational or demonstrational work. It is believed that if Federal aid is to be further extended in the construction and maintenance of highways any legislation to that end should incorporate this principle. It seems desirable that the Federal Govern-

ment should deal with the State as the lowest unit through an expert highway commission as its agency. This policy would eliminate the difficulties of the Federal Government in determining local issues, as well as the danger of undue centralized Government control. In order to stimulate self-help and to prevent undue inroads on the Federal Treasury, wherever Federal aid is extended for construction and maintenance it should be furnished on condition that the States provide an appropriation at least double that voted by the Federal Government. This would furnish an automatic check. The plans should probably provide for maintenance as well as construction, in order to prevent the possibility of the construction of roads many of which may wear out before the bonds placed upon them are paid. What roads should be improved is a matter of great moment. Unmistakably the roads of greatest economic and social importance are those over which the products from the farms can be taken to the nearest railway station and which minister to the other economic and social needs of the community. It would be desirable that no Federal funds should be expended on any project until a scheme of road construction and maintenance within a State had been developed and previously agreed upon by the proper representatives of the State and of the Federal Government. That any money which may be appropriated by the Federal Government should be apportioned on the basis of a number of factors—such as total population, farm population, area, taxable valuation, and mileage—needs no detailed comment.

LEGAL WORK.

Expansion of the department's field of activity during the year has resulted in a material increase in the legal work of the department, both in advice upon fundamental questions underlying the administration of recent acts of Congress and in the preparation of cases for report to the Attorney General under the penal provisions of these statutes.

The provision of the agricultural appropriation act for the fiscal year 1914 regulating interstate and foreign commerce in worthless, contaminated, dangerous, and harmful viruses, serums, toxins, and analogous products and committing to the Secretary of Agriculture the administration of the act adds another statute in the execution of which important legal questions arise.

Arrangements were perfected during the year for a more expeditious and economical handling of the criminal cases under the food and drugs act and under the insecticide act.

There were transmitted to the Department of Justice 1,048 cases—652 for criminal prosecution and 396 for seizure of goods under section 10. Twelve hundred and fifty cases, including some reported in

previous years, were terminated during the year—848 criminal and 402 civil. Fines amounting to \$23,463.50 were imposed in 596 of the criminal cases, and decrees of condemnation and forfeiture were entered in 365. The courts have evinced a disposition to impose severer penalties for violations of this act than in the past. Eight hundred and sixty-seven notices of judgment were prepared.

In cooperation with the Interior Department 1,184 cases involving claims to lands within the national forests under the homestead, timber and stone, mineral, lieu selection, and other general and special land laws of the United States were handled. As a result of the adjudication of a part of these cases 73,000 acres of valuable timbered lands were retained in the forests.

Four hundred and thirty-six cases of trespass on national forests were handled, resulting in the payment into the Treasury of the United States of \$27,764.91.

As in previous years, the enforcement of the 28-hour law has proceeded vigorously and effectively. There were reported to the Attorney General 1,037 apparent violations of the statute, 406 more than in the previous fiscal year. Penalties aggregating \$61,695 were recovered.

The Court of Appeals for the Second Circuit has held that connecting carriers are bound to make reasonable inquiry as to the length of time live stock have been previously confined in cars without food, rest, and water. This ruling will have a marked effect in the attainment of the purposes of the act.

The department reported to the Attorney General 92 apparent violations of these laws. In 93 cases, including some reported in the previous year, fines aggregating \$10,275 were imposed.

The department reported 81 apparent violations of the meat-inspection law to the Attorney General. Convictions were secured in 64 cases, including a few reported in the previous year, resulting in the assessment of fines to the amount of \$3,315. In seven cases sentences of imprisonment from 3 to 30 days were imposed.

Increased activity of the department in the matter of enforcing those provisions of the Penal Code regulating interstate commerce in game and wild birds resulted in the submission to the Attorney General of 154 cases, 73 of which resulted in convictions and fines amounting to \$3,557.

ENFORCEMENT OF THE INSECTICIDE ACT.

In the enforcement of the insecticide act the department has to do with two classes of insecticides, lead arsenates, Paris greens, and fungicides: First, those which enter interstate commerce or are sold or manufactured within the District of Columbia or the Territories;

and second, those offered for import into the United States at its various ports of entry.

The analyses and testing of official samples and the investigational work necessary to be undertaken have two general objects in view: (1) To secure data on which to base an action under the insecticide act; (2) to develop scientific information with a view to assisting manufacturers in respect to process of manufacture, packing, labeling, and shipping their products so that they will be in harmony with the law.

Efficient enforcement of the act is being obtained by means of prosecutions, and through hearings and correspondence many minor faults in labels have been adjusted without resort to the courts. Signal service has been rendered manufacturers of insecticides, Paris greens, lead arsenates, and fungicides in bringing to their attention scientific information relative to correcting faulty methods of manufacture, faulty methods of analysis, and faulty methods of test, thereby aiding them to place better products on the market, with more correct labels and of more certain standard.

THE FEDERAL LAW PROTECTING MIGRATORY BIRDS.

The act of Congress of March 4, 1913, authorized the department to adopt suitable regulations and to fix close seasons for migratory game and insectivorous birds according to zones. The preparation of the regulations was intrusted to a committee of three members of the Biological Survey, and after due publication the regulations were adopted and approved by the President on October 1. Under these regulations two zones were established and five forms of close seasons prescribed—a daily close season extending from sunset to sunrise for all migratory birds; an annual close season of $8\frac{1}{2}$ or 9 months for game birds; a 5-year close season for certain game birds in danger of extermination; a perpetual close season for insectivorous birds; and a perpetual close season for birds on two of the great navigable rivers.

The reception of these regulations by the public has been very gratifying. Except in a few localities they have been welcomed. The chief objections have been to the prohibition of shooting after sunset and of hunting on the Mississippi and Missouri Rivers. Their effect has been to standardize the seasons for hunting, to crystallize public sentiment against spring shooting and in favor of a reasonable open season in autumn, and to arouse general interest in the protection of our migratory birds.

The enforcement of the law presents problems even more novel and difficult than the preparation of the regulations. On account of the limited appropriation made by Congress, it is necessary to depend chiefly on cooperation with local authorities. The United States has

been divided into 13 districts, each of which will be in charge of an experienced inspector and a limited force of wardens. The inspectors are employed by the department, and the wardens are selected from experienced men on the State forces, but receive only a nominal salary from the department. Through cooperation with other branches of the Federal service and with local authorities much may be accomplished. In the few weeks that the regulations have been in effect the field force has been partially organized in half of the districts, and some interesting results have already been obtained.

FEDERAL PLANT QUARANTINE ACT.

The purpose of the Federal quarantine act of August 20, 1912, is to enable the Secretary of Agriculture to regulate the importation of nursery stock and other plants and plant products, and to enable him to establish and maintain quarantine districts for plant diseases and insect pests and to quarantine against diseased or insect-infested plants or plant products of foreign countries. The act is being effectively administered by a Federal horticultural board appointed from the Bureaus of Entomology and Plant Industry and the Forest Service of this department, in cooperation with the State, Treasury, and Post Office Departments and with horticultural inspectors of the several States.

All nursery stock offered for entry into the United States comes under two classes: (1) That from countries having an official inspection and certification system and from which commercial importations are permitted, and (2) that from countries which have no system of inspection and certification and from which importations are limited as to amount and permitted only for experimental or scientific purposes. The examination, certification, and other conditions governing importations are now well understood by importers. The Federal act has greatly stimulated foreign countries to do better inspection and to provide suitable legislation to meet our requirements. The result of this is now evident in the much greater freedom from infestation or disease of nursery stock offered for entry. Few instances of serious infestation have been found during the year, which is a marked contrast with conditions prior to the enactment of this legislation.

Under the provisions of the act permitting foreign quarantines four have been promulgated—against the white-pine blister rust of Europe and Asia, the potato wart of portions of Canada and several European countries, the Mexican fruit fly of Mexico, and the pink boll worm of cotton of Egypt.

Under the provisions of the act providing for domestic quarantines four have been promulgated—against the Mediterranean fruit fly in Hawaii, the gipsy and brown-tail moths in New England, the date-

palm scale insects in certain counties of California, Arizona, and Texas, and the pink boll worm of cotton in Hawaii. These domestic quarantines provide for the movement of the quarantined articles under a system of inspection and certification, necessitating a considerable force of inspectors, particularly in the case of the Mediterranean fruit fly and the gipsy moth and brown-tail moth quarantines. The State inspection service of California and the inspection service in New England under the appropriation for moth control have been used in cooperation with this department for the effective enforcement of these two quarantines.

CONSTRUCTIVE RESEARCH AND DEMONSTRATION WORK IN CROP PRODUCTION.

The constructive research and demonstration work bearing directly upon practical agriculture comprises activities that are exceedingly numerous and widely varied in character. There is practically no regulatory work to divert attention from the problems which are of direct and immediate importance to the farmer.

Crown-Gall of Plants.

Among the distinct achievements in the pathological field is the staining of the crown-gall organism in the tissues of the crown-gall tumor, which is the conspicuous symptom of this widespread and destructive disease which attacks a very wide range of crop plants. Important and significant results have also been obtained with regard to the relation of the crown-gall organism to animal tumors, which it is believed will be helpful to investigators of cancer in man and the lower animals.

As the result of an incidental investigation made in China by one of our agricultural explorers under instructions from the forest pathologist, it has been definitely established that the destructive chestnut-bark disease which is causing so much damage to the chestnut forests in the eastern United States was in all probability brought to eastern America from the Orient.

Potato Diseases.

The prevalence to a destructive extent of several new diseases of the potato has greatly disturbed the potato industry in some of the most important potato-producing districts of the Rocky Mountain region. The leaf-roll, curly-dwarf, rosette, and mosaic diseases which were until recently unknown in this country are receiving the attention of the pathologists in charge of this line of work.

Artificial Ripening of Dates.

It has been proved that the artificial ripening of dates can be effectively and cheaply done by merely subjecting the full-grown, though immature, fruit to a warm and humid atmosphere. This discovery of a simple, effective, and inexpensive method of ripening has

greatly simplified the profitable production of some of the choice varieties, such as Deglet Noor, which do not come to full maturity on the tree in the date orchards of the Southwest. An improved method of rooting small date offshoots has been sufficiently developed to indicate that the propagation of choice varieties of dates can be much accelerated, with the result that in future when choice varieties are introduced or originated stock of them can be made available to planters in much less time than is possible with the Old World methods.

Cotton and Corn Standards.

The increased demand from the public for sets of cotton grades indicates a marked increase of interest in cotton grade standardization. The importance to all legitimate interests of accomplishing as early as possible the universal adoption and use of uniform standards has become clearly evident.

As a result of the studies conducted for several years in connection with the marketing, handling, transporting, storing, and grading of grain, tentative grades for commercial corn have been formulated. Both producers and dealers have recently shown much interest in the subject, and it is believed that the general adoption and use of uniform grades in both our domestic and export trade would constitute a long and important step forward in American agriculture.

Foreign Plant Introduction and Exploration.

Agricultural exploration work has been vigorously prosecuted during the year in Siberia and northern China, where search is being made for trees and plants capable of enduring low temperatures and light rainfall. A preliminary exploration of the regions in western South America has been made. This has resulted in the securing of a unique collection of potatoes, which includes some varieties likely to be of distinct value in potato breeding.

Farm Management Investigations.

Important results have been obtained in the study of the cost of producing farm products, the factors which affect the profitableness of farm enterprises, and the best way of organizing these enterprises so as to obtain the greatest net income. These studies have also made possible the devising of suitable methods of farm cost accounting for farmers' use. Survey records on over 2,000 farms have been secured which give a complete analysis of the farmer's business and show the relative efficiency of labor under different farm conditions.

The systematic study of the organization of farms and of individual farm enterprises has brought a more intimate knowledge of the detailed practices and the limiting factors governing these

practices in the farm business, and has made it possible to meet with greater efficiency the increasing demand for plans and specifications for the organization and administration of farms.

Farm Demonstration.

The effort to aid the farmer through the demonstration method to improve his practice by adopting better methods has received increased attention.

Some of the most effective and most conspicuous results are found in the boys' demonstration work in the South, where 480 members of the boys' corn clubs in the various Southern States produced yields of over 100 bushels of corn to the acre. The work of the canning and poultry clubs, through which the girls of the farm are encouraged to preserve in a form suitable for home use or sale such products as tomatoes and other vegetables and fruits as can be profitably produced for local consumption, on many farms has yielded very satisfactory results.

In the Northern States a good beginning has been made in farm demonstration work during the year. This work is prosecuted for the most part in cooperation with the agricultural colleges through county agents, who devote their entire time to the study of local agricultural conditions and needs and act as counselors and advisers to farmers, encouraging the adoption of improved methods and where advisable the introduction of new crops. While the organization and establishment of this work in the North and West is too recent to indicate in any very definite way what may be expected to result from it, a summary of the work of the agents in the 30 counties longest established discloses that more than 6,500 farms have been visited and more than 1,800 farmers' meetings addressed, with an attendance exceeding 130,000. Cooperative work has been carried on directly with nearly 2,400 farmers, many of whom are being encouraged to select and test carefully their seed corn. More than 235,000 acres of corn have been planted with tested seed. Several hundred farmers are following instructions in the growing of alfalfa, clover, and potatoes, and much orchard pruning and spraying have been done as a result of the advice and instruction of the agents. These agents have made plans for the operation of nearly 200 farms, and have organized 65 farmers' clubs, with a membership of nearly 1,500 farmers.

In the boys' and girls' club work in the North and West, six State cooperative agents have been employed, who have had the assistance of five collaborators in the conduct of club work. The present enrollment in this work amounts to about 60,000 boys and girls, who are systematically organized into boys' corn clubs, girls' canning clubs, potato clubs, sugar-beet clubs, vegetable-garden clubs, etc. The aver-

age yield per acre of all the corn-club members reporting this year was 74.5 bushels, with a net profit of \$25.55 per acre; 426 made 100 bushels or more, and 1,078 made over 60 bushels per acre.

Seed Distribution.

The distribution of drought-resistant field seeds in the Great Plains area and other dry-land sections of the country has apparently been productive of excellent results. This distribution, which consisted of improved varieties and strains of field crops adapted to the regions of light rainfall, was made in such a way as to provide the farmer with seeds sufficient for an area—usually an acre—adequate to make a practical test of the adaptability of the crop to his conditions. Should it prove superior to the one he is already growing, his initial harvest in most cases will provide him a sufficient supply of seed for a considerable acreage the next year. The beneficial results from this distribution of such field seeds as alfalfa, feterita, kafir, milo, millet, Sudan grass, and other forage crops, and certain cereals suggest the advisability of radically changing the seed distribution so as to accomplish the purpose for which it was originally established, namely, the introduction into practical farming of new and valuable crops needed in the improvement and development of agriculture.

ANIMAL DISEASES, ANIMAL HUSBANDRY, AND DAIRYING.

The department is working in various ways to foster and promote stock raising and to encourage the production of a sufficient and wholesome supply of animal food for the people.

In the control and eradication of animal diseases the department is working in cooperation with State and local authorities. After 15 years of effort sheep scab, which was formerly prevalent throughout the West, has been so nearly eradicated that only a few comparatively small areas remain in quarantine. The stamping out of cattle mange has likewise been nearly completed.

Tick Eradication.

The greatest undertaking of this character has been the extermination in the South of the ticks which spread the disease of cattle known as Texas fever. Until recent years the southern part of the United States has been under the blight of these ticks, the infected area extending from Virginia to Texas and including southern California. After seven years of effort more than one-fourth of the territory originally infected has been freed from ticks and released from quarantine, and the work is being pushed vigorously and with good progress in much of the remaining area. The territory released now amounts to 196,395 square miles, being greater than the combined areas of South Carolina, Georgia, Alabama, and Mississippi. At first this work was done against some opposition because of the lack

of knowledge of its benefits, but the purposes and advantages are now so well understood that it is meeting with the hearty cooperation of the people of the affected region. The most effective means of destroying the ticks is by dipping the cattle in an arsenical solution. The success of this work is now only a matter of time and money, and with adequate appropriations the extermination of the ticks can be completed before many more years have passed. When this is accomplished a large area which has heretofore produced only a small proportion of what it is capable of raising under favorable conditions will become available for beef growing.

The Foreign Meat Situation.

In anticipation of the increased entry of foreign meat, the department dispatched two of its specialists, one to South America and the other to Australia (the principal sources of probable imports), to ascertain whether the Governments there maintain adequate supervision of their meat industries. The purpose was to safeguard our people from foreign meat that might be a carrier of disease or that might have been slaughtered under conditions that would not be permitted in the United States. The only countries of South America that are in a position at the present time to ship meats to the United States are Argentina and Uruguay. Both of these countries are conducting a Federal inspection by veterinarians of all animals slaughtered for meat which is intended for export. The inspection is quite competent. There are some minor differences between the systems of inspection there and in the United States, but on the whole the inspection is planned largely after that conducted here, and these minor differences will be overcome. A report on Australia has not yet been received. Rigid regulations governing the admission of foreign meat and meat products have been established and are being effectively enforced.

Dairying.

The department is also working for the increase and improvement of the supply of milk and other dairy products, both by means of research and by the dissemination of information.

Within the past year noteworthy results have been obtained in the research laboratories with regard to certain problems connected with the pasteurization of milk, on the cause of deterioration of storage butter, on the causes of flavor in cheese, and with regard to other facts relating to the bacteriology and chemistry of milk, butter, and cheese.

NEW METHODS OF INSECT CONTROL.

The efforts of the department in the matter of insect control have been marked by the discovery of new methods in the handling of the gipsy-moth problem in the forests of New England and by a very satisfactory increase and spread of the introduced foreign parasites

of the gipsy moth and brown-tail moth. Further field experiments of a thoroughly practical nature in the control of the alfalfa weevil, an insect which has threatened enormous losses in the West, have shown such good results that alfalfa growers in the infested territory have secured a fairly good crop of hay throughout the season, while some of the best alfalfa growers in that part of the country now insist that they can secure a larger annual yield than they were able to do before the pest appeared. Demonstrations of the possibility of control of the destructive bark beetles of the western forests have shown that threatened outbreaks can be suppressed in an almost perfect manner and at extremely little cost. The threatened introduction of the Mediterranean fruit fly from Hawaii into the Western States has received careful attention, and at the present time measures are in force which will probably effectually protect the fruit industry of the Pacific States from this pest.

AGRICULTURAL EXPERIMENT STATIONS.

The States have in recent years greatly increased the appropriations to these stations to supplement the Federal funds. The total income of the stations in 1912 was \$4,068,240, of which \$1,440,000 was received from the National Government. In the same year \$1,000,000 was expended for buildings for the stations and about \$500,000 for permanent equipment.

The Insular Stations.

Gratifying success has been attained in the growing of cereals and vegetables in various parts of Alaska, and the evidence accumulates that there may be considerable agricultural development in that Territory whenever better transportation facilities and the broader utilization of its other natural resources bring in sufficient population to give a reliable market for the products of the soil.

In Hawaii a soil survey is nearing completion and local agricultural industries have been encouraged through the results of scientific investigations, demonstration farms, and associations for cooperative marketing.

The Porto Rico station is giving special attention to the utilization of lands which are unprofitable under the present systems of cultivation. Efforts to aid in the development of the citrus industry are being continued. In 10 years the annual exports of citrus fruits have increased in value from \$230,000 to more than \$1,100,000. Coffee is receiving much attention, and it has been shown that by better methods of cultivation and fertilizing the crops can be more than doubled.

In Guam there is increased interest in agriculture on the part of the natives as the result of the station's work. Efforts are being made to improve the live stock of the island by the introduction of pure-

bred stock. A large number of tropical and subtropical fruits, vegetables, and forage plants are being tested.

IRRIGATION AND DRAINAGE.

The studies of irrigation methods and appliances now carried on in all the irrigated regions and in a number of the humid States are bringing information which will enable the farmers to reduce greatly the waste of water and thus extend the benefits of irrigation to a much larger area. The securing of competent settlers on the great areas of land in the West now coming under the ditch is still the most urgent problem in that region. The department is therefore doing all it can to bring to the actual or intending settlers who are unacquainted with irrigation practices such information as will enable them to undertake this work with success.

Examinations and surveys of about a million acres of land needing drainage have been included in the work of the department during the past year. In this way interest in drainage reclamation is being stimulated over wide areas.

AGRICULTURAL EDUCATION.

The rapid development of agricultural education in the United States, which has been so marked a feature of recent educational progress, is continuing. This has been especially apparent during the past year in the better support given to the agricultural colleges, in the establishment of additional agricultural courses in universities and colleges of private foundation, in the increasing number of States giving financial aid to secondary instruction in agriculture, in the attention given to the training of teachers of agriculture for secondary and elementary schools, in the larger attendance of students at all sorts of colleges and schools in which agriculture is taught, and in the great popularity of certain forms of elementary instruction in agriculture, such as children's gardens in cities, boys' corn clubs, girls' garden and canning clubs, and other juvenile agricultural-club work.

The department has continued to maintain a center of information on the various phases of this broad educational movement.

THE CROP OUTLOOK.

This statement as to crop yields is in a large measure an estimate. This fact should be constantly kept in mind in connection with the summary here submitted.

CROPS IN THE UNITED STATES.

From the best information at hand it appears that the production of crops in the United States in 1913 was materially below the average, the yield per acre of all crops combined being smaller than in

any year of the past decade, with the exception of 1911. This shortage was caused by a severe drought, accompanied by excessive heat during the summer months, in an important portion of the agricultural district of the United States, and particularly in Kansas, Oklahoma, Missouri, and adjacent States.

Inasmuch as crop production in 1912 was unusually large, a greater proportion than usual has been carried into the present crop year, which should mitigate somewhat the effects of the shortage of this year's crops.

The corn crop, the most valuable farm product of this country according to the estimates, fell below 2,500,000,000 bushels, which is smaller than any crop since 1903 and about 660,000,000 bushels smaller than the record crop of 1912. The estimated yield is 23 bushels, compared with a yield of 29 bushels in 1912 and an average yield of about 27 bushels. In only 9 of the past 47 years has the yield per acre been less than 23 bushels.

Wheat production, with an estimated total of 753,000,000 bushels, notwithstanding the general crop shortage, is the largest ever recorded in this country. The crop was practically matured before the drought became effective. The largest previous estimate was for 1901 (like this year, a short-crop year), with 748,000,000 bushels. The production in 1912 was estimated at 730,000,000 bushels. In yield per acre, this year's estimate of 15.2 bushels has been exceeded five times in the past 47 years. The estimated average yield for the past 10 years was 14.2 bushels.

The oat crop, estimated at 1,122,000,000 bushels, although nearly 300,000,000 bushels smaller than last year's record crop, is the third largest in our history, the crop of 1910 holding second place. There has been a steady expansion of area in this crop. The yield per acre, however, was slightly below the 10-year average.

The hay crop, estimated at 63,460,000 tons of cultivated hay, is nearly 13 per cent smaller than the large crop of 1912. In yield per acre the estimate is 1.31 tons, compared with a 10-year average of 1.43 tons. The lowest yield per acre in the past decade was 1.10 tons in 1911, and the highest 1.54 tons in 1903 and 1905. Rather liberal rains in the late summer and fall have produced good pastures.

The production of cotton has not yet been estimated. Present indications are that the yield per acre will be slightly below the average; but, as the acreage is large the total production, which will probably exceed 13,000,000 bales, will rank perhaps fourth or third in size.

The acreage devoted to the five crops mentioned—corn, wheat, oats, hay, and cotton—comprises about 90 per cent of the area in all crops, and therefore has a predominating effect upon the general average condition of all crops. Nearly all of the minor crops were materi-

ally smaller this year than in 1912, and the per acre yields below their average. The potato crop is estimated at 328,000,000 bushels, as compared with 420,000,000; tobacco, 903,000,000 pounds, compared with 963,000,000; barley, 173,000,000 bushels, compared with 224,000,000; rye, 35,000,000 bushels, compared with 36,000,000; flaxseed, 19,000,000 bushels, compared with 28,000,000; buckwheat, 14,000,000 bushels, compared with 19,000,000; sweet potatoes, 56,000,000 bushels, compared with 55,000,000—in each case comparison being with 1912.

The yields per acre of all crops combined compared with their 10-year average yields in those States which fared most favorably in crop production this year were, if 100 is taken to represent the average: Arizona, 116; Minnesota, 115; Florida, 111; Wisconsin, 110; Virginia, 107; South Carolina, 106; Nevada, 105; Oregon, 105; Georgia, 104; and North Carolina, 104.

Similarly, the yields per acre of all crops combined compared with their 10-year average yields in those States which suffered most severely in shortage were, on the same basis: Kansas, 61; Oklahoma, 62; Missouri, 71; Nebraska, 78; Illinois, 80; South Dakota, 82; Kentucky, 83; New Mexico, 84; Tennessee, 88; and California, 88 (the shortage in California is due largely to a freeze of exceptional severity to citrus crops and to drought in the spring of 1913).

To the producers the lessened crop production this year is largely compensated by the increased prices received for their produce; for, although the total crop production is approximately 12 per cent smaller than last year's production, the average level of prices of crops on November 1 is about 13 per cent higher than last year.

CROPS OF THE WORLD.

Distinctive features of "world" crops in 1913 as compared with 1912 are increased areas sown to wheat, oats, barley, rye, and corn. The wheat acreage has probably yielded a record outturn; barley, oats, and rye are bountiful crops, but corn will probably give the poorest result in 20 years. Comprehensive figures for all countries are not available, but the 12 countries which ordinarily produce over 80 per cent of the world's wheat crop have officially returned their aggregate acreages in 1913 compared with 1912 as follows: Wheat, 240,622,000 against 236,685,000 acres; oats, 123,235,000 against 119,027,000 acres; barley, 50,830,000 against 48,219,000 acres; and rye, 97,516,000 against 95,293,000 acres. The increase in the wheat area was almost exclusively in the United States and the Russian Empire; cultivation retrograded notably only in Hungary, Roumania, and British India, due chiefly to meteorological causes.

The wheat yields of the 12 countries in 1913 aggregated 3,398,638,000 bushels, compared with 3,259,600,000 bushels in 1912. The estimated increase of over 150,000,000 bushels in the yield of these

countries this season, if finally realized, indicates that the 1913 world crop will surpass all previous records, the total yield of 1912 (3,764,000,000 bushels) having been the maximum up to that date.

The 1913 world oat crop, though not a record, will rank among the largest ever grown. The yield in 1912 totaled 4,582,000,000 bushels, of which the 12 countries produced 3,750,000,000 bushels. Preliminary official estimates make the outturn of the 12 countries for the present season 3,629,000,000 bushels, the shortage being entirely in the United States.

A noteworthy feature of the rye crop of the countries in question is the deficiency in 1913 of the principal rye-producing country, Russia, which reports a crop of only 895,000,000 bushels against 1,044,000,000 bushels in 1912. In the German Empire, the other principal rye-producing country, the returns indicate a yield in Prussia alone of 375,512,000 bushels, or a 44,000,000-bushel increase over the crop of the preceding season. Increased outturns in other countries are likely to counteract the shortage in Russia.

Preliminary estimates of the 1913 output of barley in such of the 12 countries as report upon this crop aggregate 1,009,821,000 against 1,031,897,000 last year. There is a deficiency, compared with the previous year, of 50,000,000 bushels in the United States and a slight falling off in Prussia, but an increase in the yields of Russia, Hungary, Spain, and France.

The tremendous shortage in the 1913 world corn crop, consequent upon a crop failure in parts of the United States, is coincident with deficient yields in Russia. In other countries of southern Europe the prospect is for a bounteous harvest.

SUMMARY OF THE MORE IMPORTANT FEATURES.

When the Department of Agriculture was first organized, and for many years thereafter, its work was confined to matters directly affecting agriculture. Congress has, however, more recently enacted legislation charging the department with the enforcement of numerous regulatory laws, including those relating to meat inspection, animal and plant quarantine, food and drugs, game and migratory birds, seed adulteration, insecticides, fungicides, etc., many of which only indirectly affect agriculture. Its activities, therefore, now concern, directly or indirectly, all the people.

To carry on the work of the department during the last fiscal year, Congress appropriated \$16,651,496 for ordinary expenses, in addition to which permanent annual appropriations, special appropriations, and balances from previous years amounting to \$8,303,412.68 were available, making a total of \$24,954,908.68. The total of funds which has been or will be returned to the Treasury, together

with miscellaneous receipts, aggregate \$3,132,303.82. Of this amount there was received from the sale of timber, grazing permits, condemned property, etc., \$2,449,287.66, which has been deposited in the Treasury. About three-fifths of the appropriation, or about \$15,000,000, was expended for regulatory work, and the remainder, or about \$9,000,000, for scientific research, experiments, and demonstrations directly affecting the farmer.

An important change in the system of handling the financial affairs of the department was effected toward the close of the year, which is very satisfactory and results in a saving of time and money.

Several changes in the organization of the department have been effected with the object of developing more complete coordination of the work of the several bureaus and between the department and other Federal departments and State and other agencies interested in agricultural development.

The Weather Bureau stations and substations will undergo gradual reorganization and elimination; this bureau will cooperate with the Hydrographic Office in the publication of various meteorological charts; the research work at Mount Weather will be discontinued and only climatological records made there; the bureau will give more attention to special crop warnings and the forecast service and will include in its scientific work studies of storms, hurricanes, frosts, and cold waves.

The soil-survey work has been made more valuable by the establishment of cooperation with the States, including their experiment stations, colleges, and agricultural bureaus. The department will give precedence in conducting soil surveys to those States which cooperate with it. During the year 19 States have appropriated money for soil surveys under the new plan of cooperation.

The decision of the Attorney General and subsequent action of the Secretaries of the Treasury and Commerce in rescinding Regulation 39 placed meats and meat products under the pure-food law. This necessitated new machinery and some reorganization in the Bureau of Chemistry and made necessary close cooperation with the Bureau of Animal Industry. The general effect was to give the Federal Government control over meat and meat products in interstate commerce and in all stages of transit instead of restricting its jurisdiction to the Federal-inspected meat establishments. Other changes in the bureau are designed to coordinate and improve its work, including the establishment of food and drug standards.

The new fields of work upon which the department has entered include the study of marketing farm products, rural organization, rural credits, rural hygiene and sanitation, the condition of woman on the farm, the popularization of the department's work, and the de-

velopment of closer relations with the State agricultural institutions along the lines of the plan submitted to the executive committee of the Association of Agricultural Colleges and Experiment Stations at its recent meeting in this city.

The national forests are rapidly being made self-supporting, many of them already returning more than the operating cost. There are great power possibilities within the national forests, 76 projects being already developed and 30 under construction. As the market for power increases, there will be a much greater demand, and the Government should make power sites available under such terms as will encourage the investment of capital and fully insure the interests of the public. The recreational use of forests should be encouraged.

The trend of the movement for better roads is in the direction of State and Federal participation, and to-day 34 States have some form of highway commission.

The department is cooperating with the Postmaster General in the improvement of selected roads, for which Congress appropriated \$500,000 conditioned upon the raising of double that amount by the States in which such roads are located. Construction is now under way on some of these roads.

Fines aggregating \$23,463.50 were imposed in 596 cases for violations of the food and drugs act; there were 436 cases of trespass on the national forests, the fines for which amounted to \$27,764.91; penalties amounting to \$61,695 were recovered for violations of the 28-hour law; violations of the live-stock quarantine acts resulted in fines aggregating \$10,275; violations of the meat-inspection law resulted in the assessment of fines aggregating \$3,315; convictions in 73 cases for violations of the game laws resulted in fines amounting to \$3,557; and fines for violations of the insecticide and fungicide act amounted to \$1,100.

An efficiency system has been established in the department affecting all employees, under which advancement will depend wholly upon merit.

A budget or project system for handling all work of the department has been inaugurated, which will make possible the determination of the relative cost of different kinds of work and eliminate duplication.

The work of the extermination of the tick, which is the cause of Texas fever in cattle, has been pushed vigorously in the South, the territory now released aggregating 196,395 square miles. The most effective means of destroying ticks is by dipping cattle in an arsenical solution.

In anticipation of the increased entry of foreign meat, two department specialists were dispatched—one to Australia and one to Argentina—to ascertain whether these Governments maintained adequate supervision of their meat industries. At the present time the only countries in South America in a position to ship meats to the United States are Argentina and Uruguay. Both of these countries are conducting federal inspection by veterinarians of all animals slaughtered for export, and the inspection was found quite competent. A report has not yet been received on Australia.

The production of crops in the United States in 1913 was materially below the average, the yield per acre of all crops combined being smaller than in any year of the last decade except 1911. The corn crop was a little below 2,500,000,000 bushels, the average yield being 23 bushels per acre; the wheat crop, estimated at 753,000,000 bushels, is the largest yield recorded for this country. The oat crop was 1,122,000,000 bushels; the hay crop, 63,460,000 tons; and the cotton crop probably 13,000,000 bales.

RECOMMENDATIONS.

That authority be given to codify existing legislation affecting the department in order to more clearly define its duties and functions, and to prepare and submit to the next Congress a plan for reorganization with a view to broadening the work, unifying its efforts, promoting harmony and economy, and adjusting its relations with the States.

That legislation be enacted for effectively conveying existing agricultural information to the farmer. The methods recommended are embodied in a bill submitted simultaneously in the two Houses of Congress by Hon. Hoke Smith and Hon. A. F. Lever.

That the food and drugs act be amended to permit the establishment of legal standards for judging foods and for a broader definition of a "drug."

That if Federal aid is to be further extended in the construction and maintenance of highways, any legislation to that end should incorporate the principle of cooperation with the States on the condition that the States provide an appropriation at least double that provided by the Federal Government; that no Federal funds should be expended until a scheme of road construction and maintenance within a State had been developed and agreed upon; and that any money appropriated by the Federal Government should be apportioned on the basis of a number of factors.

That the name of the Bureau of Statistics be changed to the Bureau of Agricultural Forecasts, as indicating more clearly the nature of its work.

That the present broad authority for investigating the marketing and distribution of farm products be continued without change and that additional funds be provided.

That provision be made for the establishment of grading standards for various farm products and for the promulgation of the standards already established by the department for cotton and corn grades.

That special consideration be given to the problem of devising better rural credit facilities.

That the law be changed to permit the granting of term licenses on the national forests for the construction of hotels and summer cottages, and for similar purposes, with the view of promoting the recreational use of the forests.

That authority be given the department to cooperate with cities and towns in the safeguarding of the public health through sanitary regulations of the use of national forest watersheds.

That authority be given for the classification and addition to the national forests of public lands valuable only for forest purposes which are now exposed to fire and trespass and which often endanger the forests under protection.

That the law governing the development of water power within the national forests be modified to permit development under terms which will not only encourage the investment of capital but will fully insure the interests of the public.

That means and authority be granted to make more complete studies of domestic conditions on the farm, including the question of practical sanitation and hygienic protection for the farm home as well as labor-saving devices.

That certain modifications be made in the laws relating to the publications of the department to permit the more efficient utilization of its printing fund.

That increases aggregating \$1,074,387 be made in the appropriations of the department for the next fiscal year.

That the salary limit of scientific workers in the department be raised.

Respectfully submitted.

D. F. HOUSTON,
Secretary of Agriculture.

WASHINGTON, D. C., *December 1, 1913.*

REPORT

OF THE

SECRETARY OF COMMERCE.

DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
Washington, December 16, 1913.

To the PRESIDENT:

I have the honor to submit my first annual report, being the eleventh annual report of so much of the former Department of Commerce and Labor as is now included within the Department of Commerce.

Under the headings in the following pages of the divisions constituting what is technically called the Office of the Secretary and of the bureaus which with them constitute the Department will be found outlined the work of the Department in its various subdivisions.

Under the Disbursing Office will be found a statement of the cost of the Department's operations during the last fiscal year, together with the details of the division of the appropriations for that year between the newly formed Department of Commerce and Department of Labor.

PRESENT ORGANIZATION OF THE DEPARTMENT.

Referring, therefore, to subsequent pages for the details of the service of the Department during the past fiscal year, let me state briefly here what the present organization of the Department is, and, after a few words explanatory of this, proceed to certain outlines of present and future policy looking toward the development of the work of the Department into spheres of enlarged social and public usefulness.

The Department consists of nine bureaus and the Office of the Secretary, the latter being divided into five divisions—Office of the Chief Clerk (including the Division of Supplies), Disbursing Office, Appointment Division, Division of Publications, and Office of the Solicitor. The nine bureaus are respectively those of Foreign and Domestic Commerce, Corporations, Standards, Census, Fisheries, Lighthouses, Coast and Geodetic Survey, Steamboat-Inspection Service, and Navigation.

HOUSING ACCOMMODATIONS.

The Office of the Secretary and five bureaus have been concentrated since October 1 in the Commerce Building, Pennsylvania Avenue and Nineteenth Street NW. The Bureau of Standards, Bureau of the Census, Bureau of Fisheries, and the Coast and Geodetic Survey are in separate buildings in various parts of Washington, all of which, save that occupied by the Census, are owned by the Government. It is hoped to unite during the current year the Bureau of the Census with the rest of the Department by an addition to the Commerce Building. This would save annually a large sum, because the rented building which the Census Bureau now occupies is very costly to maintain. It is also intolerably hot in the summer season, insanitary, and of such construction as to expose to constant risk from fire the invaluable papers stored therein.

The rental paid by the Department for the two privately owned buildings which it occupies, together with that paid for a small stable, amounts to \$70,800 per annum, equal to the interest on \$2,360,000 at 3 per cent. There is a constant element of money loss as well as a loss of efficiency in the separation of the Census Bureau, the Bureau of Fisheries, and the Coast and Geodetic Survey from the rest of the Department. The work of the Bureau of Standards is of such a character as to require that it be placed at a distance from the built-up portions of the city. No such condition affects these other bureaus, two of which are near the Capitol, one on the Mall, and all so placed as to produce the maximum of expense in operation and maintenance with the minimum of efficiency in results. Furthermore, the buildings in which the Coast and Geodetic Survey and the Bureau of Fisheries are located are as ill adapted for their purposes as is that occupied by the Census. Indeed, it would be hard to find two buildings worse suited for the uses to which they are put than are those in which these two important services are housed. Much important work of the Coast and Geodetic Survey is conducted in what was an old stable, and the invaluable plates and records of the Survey are in constant danger of destruction by fire. Two small fires have already occurred and would have resulted in the destruction of the building if the blazes had not been early discovered through a fortunate accident. The building occupied by the Bureau of Fisheries was built as an armory for the militia of the District of Columbia in 1856. In 1878 it was used as a storehouse. In 1882 it was partly used for a fish hatchery. It has long been antiquated and out of date. No private concern that had an eye to economical management would permit the use of these buildings for their respective purposes longer than necessary for obtaining the funds to replace them.

PROPOSED NEW BUILDING.

I strongly recommend that the proposed new Government building for the Department of Commerce be so planned that it shall contain the Bureau of the Census, the Coast and Geodetic Survey, and the administrative portion of the Bureau of Fisheries.

The Bureau of Standards must necessarily remain in its own special laboratories built for its use.

The Bureau of Fisheries should be provided with a modern aquarium, suited alike for the education of the public and the carrying on of the scientific work of the Bureau. This should be housed in a separate building, located as near as practicable to the proposed new building for the Department.

Land has already been purchased by the Government for a building of its own for the Department of Commerce and it would in my judgment be easy to revise the plans for the space intended at the time the plans were made for the bureaus since diverted into the Department of Labor so that it may receive, as above stated, the Census, the Fisheries, and the Coast and Geodetic Survey. In this connection I venture on behalf of the Department and as a business man to protest against the policy of paying rent to private parties for buildings intended for the public service, especially when this requires the work of a great department to be split up into numerous separate parts at a greatly enhanced cost for maintenance and operation.

The Department of Commerce occupies the Commerce Building under a five-year lease, but it would take substantially that time to complete the new structure and it would in my judgment be wise fiscal policy to proceed as promptly as possible with the latter. The site now occupied by the Coast and Geodetic Survey, of which a portion is occupied also by the United States Public Health Service, is a valuable corner immediately adjoining the Capitol, admirably suited for a building to be used in connection with the legislative branch but quite unfit for the home of a part of an executive department most of which is placed at the far end of the city.

EXPENDITURES, PERSONNEL, AND EQUIPMENT.

The cost of maintaining the Department of Commerce for the fiscal year ended June 30, 1913, reckoning only those bureaus of the former Department of Commerce and Labor which are now the Department of Commerce, was \$11,275,977.24. On June 30, 1913, there were turned in to the surplus fund in the Treasury unused balances of the appropriations for the Department of Commerce and Labor amounting to \$618,970.01. The total force employed at the close of the fiscal year (excluding all employees for bureaus now in

the Department of Labor), of which details appear under the Appointment Division, was 17,674 persons. The work of the Department requires the use of the following vessels: Coast and Geodetic Survey, 11; Bureau of Navigation, 1; Bureau of Lighthouses (exclusive of light vessels), 44, and Bureau of Fisheries, 8, a total of 64. This is exclusive of four vessels loaned to the Coast and Geodetic Survey by the Philippine Government. Its services cover the lighting and surveying of the Atlantic, Pacific, and Gulf coasts of the continental United States, the shores of Alaska, Porto Rico, and Hawaii, the lighting of the Great Lakes with their connecting rivers, and the survey of the shores of the Philippine Islands.

The Bureau of Fisheries maintains 34 main and 92 auxiliary fish hatcheries and culture stations, and exercises supervision over the salmon fisheries of Alaska and over the seal herd on the Pribilof Islands; in the Bering Sea.

The Bureau of Standards has laboratories in Washington and Pittsburgh.

The Coast and Geodetic Survey maintains magnetic observatories at Cheltenham, Md.; Tucson, Ariz.; Vieques, P. R.; Sitka, Alaska, and Honolulu, Hawaii, and takes tidal observations at regular stations in Maine, New York, New Jersey, Pennsylvania, Maryland, Florida, Texas, California, Washington, and Alaska.

The Bureau of Foreign and Domestic Commerce has opened, or is preparing to open, offices in New York, Chicago, New Orleans, and San Francisco.

The above survey is both brief and partial, but it gives an idea of the extent of the work of the Department. It may be added that the commercial agents under the Bureau of Foreign and Domestic Commerce travel abroad through all lands, and that the same Bureau receives and publishes the commercial reports of our consuls in all countries, while the agents of the Census Bureau cover all parts of the United States.

OUTLINE OF PRESENT AND FUTURE POLICY.

NECESSITY FOR INCREASED APPROPRIATIONS.

The appropriations for the current fiscal year (ending June 30, 1914) provide for the use of the Department the sum of \$11,485,027.07. The estimates for 1915, including \$484,000 for printing and binding but excluding \$785,000 not directly estimated for public works for the Lighthouse Service, total \$15,800,270, an increase of \$4,315,242.93 over the appropriations for 1914.

The largest single item in the increased funds requested is the necessary provision for the quinquennial census of manufactures which is by law required to be taken for the year 1914. The sum required for this work is \$566,400. Another considerable item is

the request on the behalf of the Coast and Geodetic Survey for three new vessels for Alaska and three small vessels for wire-drag work and resurveys on the Atlantic coast. Attention has been sharply concentrated upon the dangers of the Alaskan coast by the disasters to the Lighthouse vessel *Armeria* and to the *Curacao* and the *State of California*. The last vessel struck an uncharted pinnacle rock in Gambier Bay on August 17, 1913, and sank immediately with the loss of 31 lives. Following these and other accidents the maritime interests of the Northwest have earnestly urged that the coast of Alaska be not only protected by lights and buoys but that the dangers of those shores be carefully surveyed and charted by modern methods. It is obvious that this must be done before Alaska can reach her true prosperity, for we can never approach that territory direct from our own shores except by water, and her maritime commerce must always be a large portion of her total trade. Furthermore, the enlightened humanity of this great nation forbids our accepting such great risks as that involved in the loss of passenger steamers longer than is necessary to bring the funds and the forces of the nation to bear upon them. Three new vessels are therefore needed by the Coast Survey on the shores of Alaska, one of which must replace an old ship not fit for service in exposed localities. The method of surveying known as the "wire drag," had it been used in Gambier Bay, Alaska, a year or more ago, would have saved the loss of the vessel and lives in the case of the steamship *State of California*. Only one such organization is now possible with the funds available. That is at work on the Atlantic coast. Three small vessels are needed to continue this work and it is of urgent importance for human safety that a "wire-drag" party be provided for Alaska.

In like manner and for the same reason it is requisite that the shores of Alaska shall be lighted as promptly as possible and that the necessary aids to navigation on that dangerous coast shall be rapidly multiplied till all dangers are marked. Delay either in the survey or in the protection by lights and buoys of these shores is so risky and unwise a course that this Department can not be responsible for it. Such sums, therefore, as can be wisely spent during the coming fiscal year in these important works form a portion of the increase in the estimates above cited.

There remain five fundamental matters of policy for which funds are asked and to which I specially desire to call your attention and that of the country.

REORGANIZATION OF BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

Under the caption "Bureau of Foreign and Domestic Commerce" will be found a plan for the reorganization of that bureau which

has already met with your approval and which forms a portion of the estimates for the coming year. Our foreign commerce has grown by leaps and bounds until during the fiscal year ended June 30, 1913, it reached the great total of \$4,279,000,000 in value. Of this great sum \$2,466,000,000 were exports and \$1,813,000,000 were imports, showing a trade balance on these transactions in our favor of \$653,000,000. Quite as important as the aggregate, however, are some of the details that go to make up the totals. Our exports of domestic manufactured goods of all kinds amounted to \$1,507,000,000, or 63 per cent of our total domestic exports. Again, it will be noted with special interest that out of this total of sales of manufactures that particular portion which represents the sales of fully finished manufactures was \$778,000,000 in value, or 50 per cent of the total exports of manufactures. To state it differently, our exports of crude food-stuffs and of crude materials of other kinds have fallen to a minor place, and the largest element in the greatest aggregate of foreign sales ever made is that of manufactured goods, and among these manufactured goods the item of fully finished manufactures is the largest. It is also that which has been growing most rapidly.

It certainly can not be said that the Government has done much to foster this great and growing trade. The entire appropriation for the promotion of our foreign commerce has been \$60,000, much less than is annually spent for advertising by many a large retail establishment, nor has the Bureau of Foreign and Domestic Commerce, which is supposed to have had this great trade under its fostering care, been equipped either with men or means or organization adequate for the work.

In the estimates for the coming fiscal year, therefore, a sum has been included which will provide for the reorganization of the Bureau into such form as will make it the basis for productive effort in developing American industries in every field which is normal to them at home and abroad. It is not suggested that in the plans which have been submitted for the approval of Congress there is aught that is original. They simply follow in general the organization which our commercial and industrial competitors have already in active service. They aim to provide a threefold organization abroad containing those elements of permanence and flexibility essential to efficient work, and furnishing the general and the local inquiry essential to any thorough grasp of foreign markets.

Briefly stated, the proposed organization provides for—

Commercial attachés.—These are officers to be located at each of fourteen capitals as hereinafter described, accredited to our embassies there by the Department of State but reporting directly to the Department of Commerce. Each of these officers will be provided with a clerk and allowance will be made for traveling expenses

within the limits of the country to which he is sent. Their purpose will be to study the commerce and industries of the nations where they reside. They will have no other duties. They will collaborate with the consuls, having the advantage of the larger view and of the freedom from other cares.

Consular service.—It is recommended that the consuls shall on purely commercial matters report directly to the Department of Commerce and that they shall cooperate with the commercial attachés in presenting between them a complete and unified knowledge of the commerce and industries of our great competitors. These two forces should normally supplement each other—the attaché has the general field, the consul the particular field. The one collects; the other coordinates. Each supplies with the other that which without him we could not have. Each is at once a corrective and an incentive to the other.

Commercial agents.—It is intended to enlarge this force, which is composed of special investigators trained in their separate lines of study, each pursuing some special theme and for that purpose traveling from country to country wherever information on that subject can be had. A force of from twelve to sixteen men has been employed in this work with excellent results, but obviously that force is quite insufficient, and it is hoped substantially to double it. For this purpose a special appropriation of \$100,000 is asked for the study of commercial conditions in South America, and the former sum of \$60,000 for the whole world is, in addition to the above, increased to \$100,000.

The organization of the Bureau is changed as described herein to provide for the proper direction and control of these forces and funds and to permit following out the duty heretofore imposed by Congress on that Bureau of inquiring into the cost of production at home and abroad, for which purpose a special sum of \$100,000 is also asked.

The direct appropriations for the fiscal year 1914 for the Bureau of Foreign and Domestic Commerce (other than printing and contingent expenses for the Bureau in Washington, which are part of the Department appropriation) amounted to \$224,860, while the estimates for the fiscal year 1915 for the same Bureau are \$592,130, or an increase of \$367,270 in the estimates for 1915 over the appropriations for 1914. Details follow under the heading of the Bureau.

The personnel of the Bureau of Foreign and Domestic Commerce during the fiscal year 1914 is about 119 employees. Under the plan contemplated in the estimates for 1915 it is estimated that 200 persons will be employed, or an increase of 81.

It is my belief that the above marks a turning point in American policy toward the great world of commerce and industry abroad and

that it must be reflected in increased prosperity to our capital and labor at home. It is the counterpoise for our industries of the assistance we are giving to agriculture and means for the workman that which improved methods are already bringing to the farmer.

Since Congress in August, 1912, omitted the appropriation for the collection of figures of internal commerce, the statistics of our domestic commerce have not been gathered. Many protests have been received on this account. In the present state of the law the Bureau of Foreign and Domestic Commerce is without power to secure the reporting of the movements of products in the internal commerce of the country and the machinery in the field for the collection of accurate figures is wanting. The vast movements of products in our coastwise trade are unrecorded. It is earnestly hoped that Congress may clothe the Bureau with power to secure this important information and may permit the use of funds at the disposal of the Bureau for this essential commercial purpose.

INQUIRY INTO EFFICIENCY OF INDUSTRIAL COMBINATIONS.

It is deemed desirable that the Bureau of Corporations shall undertake a study of certain fundamental economic laws on which all our industries are based. There is a growing question in the minds of experienced and thoughtful men as to whether the "trust" form of organization is industrially efficient and whether bigness and bulk are always necessary to production at the lowest cost. It may be conceded that massing of capital and the grouping of great quantities of labor have certain elements of efficiency. They permit research on a large scale. They do away with excessive expense in the maintaining of separate offices and numerous sales organizations. They provide means for the purchase and use of apparatus that can only be employed where production is large. All these things and others like them are unquestionably true and account for much that has been done in promoting the great industrial combinations that are so largely discussed among us. But it is doubtful, at best, whether these favorable elements are all the factors that exist and whether there does not come a point of maximum efficiency at minimum cost beyond which an increase of product means an increase of cost per unit of that product. It is significant that some of the great trusts have ceased to exist; that others pay but moderate dividends, if any, on their securities, and that side by side with the most mighty and supposedly the most efficient of them have grown up independent organizations quite as successful and perhaps earning even more upon their capital than their powerful competitors. Furthermore, it is undoubtedly true that many of the most profitable businesses in the country are those of moderate size and that this is so even in lines where large concerns

exist of apparently less earning capacity. There is no criticism here of "big business" as such but merely the question as to whether "big business" has not its very marked limitations and whether there are not cases where bigness is rather less desirable than efficiency.

It is not necessary to recite the factors which are believed by many to limit economical production in the overgrown enterprise, particularly if its overgrowth be gained by the aggregation of what were unrelated parts. The purpose of the Bureau of Corporations is to study patiently into the historical facts, financial facts, economic facts, facts of human welfare and human productiveness, facts concerning equipment, handling, storing, selling, management, and the like, in order that we may know whether these bulky things that we have so much feared are in an economic sense real giants in strength or whether they are but images with feet of clay. It is of the utmost importance that the laws which govern these things should be made known, for without knowledge of those laws legislation may be vain. It is a common truth that economic laws are stronger than statute laws. There can be no objection, therefore, on the part of anyone, whatever his views of industry, toward a study which shall determine the truth, which truth, if it be indeed the truth, must itself determine in the final analysis the course which the legislature and the executive may wisely take concerning these matters.

For the purpose of this inquiry and for that of studying into the economic laws governing the control of retail prices on the part of manufacturers a considerable sum is asked. The total of the appropriations for the Bureau of Corporations for the fiscal year 1914 was \$253,300. The estimates for the fiscal year 1915 amount to \$685,000, or an increase of \$431,700 in the estimates for 1915 over appropriations for 1914.

The personnel of the Bureau of Corporations for the fiscal year 1914 will average 120 employees, while the estimated personnel for the fiscal year 1915 will be 343, or an increase of 223 employees.

STUDY OF ECONOMIC LAWS GOVERNING THE FIXING OF RETAIL PRICES.

It is important that we should know the truth about the fixing of retail prices and as to whether giving the privilege of so fixing the prices to a manufacturer tends toward monopoly or does not so tend. Men who are sincere and well informed do not think alike on this problem, but whatever their views it will be agreed that no thorough study has ever been made of the subject in this country. Nations abroad are said to favor by law that which we forbid. The law with us is for the time fixed by the decision of the Supreme Court that the fixing of retail prices on the part of manufacturers is unlawful. If,

however, new legislation should in the future be required, it is important that the truth be known lest injustice be done, not so much to the manufacturer as to the consumer. Some men, well informed, argue that the fixing of retail prices under conditions where competition in manufacture exists tends to promote competition. Others say that the refusal to permit the fixing of retail prices tends to monopoly because in the cut-throat competition certain to follow obviously the stronger competitor will survive and may eventually have the business in his own hands, for the law forbids the making of agreements to maintain prices, and under these circumstances the weakest must go to the wall. Such being the views expressed by thoughtful men on a matter in which every consumer is interested because he must needs buy such articles, it is important that the subject should receive thoughtful study, and this the Bureau of Corporations purposes to give to it.

GATHERING OF UNDERLYING FACTS CONCERNING PUBLIC-SERVICE
CORPORATIONS.

The Bureau of Standards has begun in a moderate way, and rather through the requests of others than of its own initiative, an inquiry into certain elements underlying the work of our public-service corporations. Another item of increase in the estimates for the coming year is that of \$100,000 in order that the Bureau may carry this work out systematically. It is important that every city and State shall have at its command as accurate and thorough information concerning the facts which underlie its public utilities as is possessed by the companies that operate those utilities. It is quite as important that the public-service companies should themselves know that the municipalities and States are as well informed on these matters as they are themselves. Such information comes to the public-service companies normally out of the operation of their plants, but such information is not always available now to the public authorities that must regulate the public utilities. These facts are of many kinds—electrical, chemical, physical, etc. The Bureau of Standards has the equipment and the organization and the authority to undertake the study. It lacks the funds, and Congress is requested to provide them. What the Bureau has already done in this direction has saved much in litigation, a great deal of passion, large sums of money, and a great deal of time. Its statements, being known to be unbiased and made without thought of profit, are and will be accepted by all parties in interest to the promotion of peace and to the benefit of every man who lights an electric lamp or rides on a street car.

INQUIRY INTO COST OF PRODUCTION OF CLOTHING.

It remains to state but one further point of important policy that the Department desires to carry out. It wishes to supplement the inquiry now drawing to a close into the cost of production in the pottery industry by undertaking an inquiry into the cost of production of clothing of all kinds and of different materials, including hosiery, knit goods, and their fellows. It is recalled that not only is this a matter which affects every man and woman in the country but that it is a subject which has been approached several times but which has never received thoughtful study as a whole. The late Tariff Board inquired into the cost of cotton and woolen and worsted cloth and to some extent into the costs of making knit goods and hosiery. It did not, however, pursue its inquiries fully into the cost of making all clothing of various kinds. Different States and municipalities have given study to the important question of wages and labor in the clothing industries and to the working conditions in them. No one to my knowledge has ever correlated the work of the various public and private organizations—national, State, and municipal—and has added to them an inquiry into the fundamental elements of cost in these industries. Such a study should have important social results. It should develop the question as to whether the sweatshop is economically efficient or whether by a properly organized and more scientific method of manufacture it would not be eliminated by the natural operation of economic law.

The inquiry is not one that can be hurried. It has already been begun with a portion of the funds recently appropriated by Congress. It will be continued if the appropriation of \$100,000 for this and similar work included in our estimates is made by Congress.

INSUFFICIENT EQUIPMENT OF THE DEPARTMENT.

I regret to find the physical condition of the equipment of the Department in some respects very poor. For example, the 44 light-house tenders are, with one exception, without wireless telegraph apparatus. Most of them are seagoing vessels, constantly patrolling our coast, and the nature of their duties makes them peculiarly familiar with its dangers. Loss of life and property may at any time occur because there are no means of summoning these efficient vessels to the help of the distressed.

The salmon agents of the Bureau of Fisheries, whose duty it is to inspect the numerous canneries along the Alaskan coast, are without means of transportation in a territory where there are often no regular transportation lines. They are therefore forced into the absurd position of depending upon the canneries, which they must inspect, for the means of travel to make such inspections. This, coupled with

the fact that four men can hardly cover well some 25,000 miles of coast, is a condition that should not be allowed to continue. Request has therefore been made of Congress for vessels to provide proper means of transport for the inspectors and an increased force of them.

The lighthouses along our coast are not connected by a telephone system. Telephones were installed during the Spanish war, but they have been allowed to fall into disrepair and are out of use. I know of one wreck near a lighthouse where for lack of a telephone lives were lost, for neither the lighthouse nor the life-saving station close at hand had any means of communication. I do not believe the generous American people desire their lighthouse vessels to be without wireless apparatus, their lighthouses to be without telephones, or their fisheries inspectors to be at the mercy for transportation of the people whom they are supposed to watch. Recommendations have been made to Congress covering all these matters.

OFFICE OF THE SECRETARY.

OFFICE OF THE CHIEF CLERK.

TRANSFERS TO THE DEPARTMENT OF LABOR.

The act approved March 4, 1913, creating a Department of Labor, transferred from the Department of Commerce and Labor the Commissioner General of Immigration, the commissioners of immigration, the Bureau of Immigration and Naturalization, the Division of Information, the Division of Naturalization, the Immigration Service, the Bureau of Labor, and the Children's Bureau, and all that pertained thereto, and changed the name of this Department to the Department of Commerce. The total number of positions in the aforementioned services at the date of transfer was 1,798, and the value of the property in the bureaus in Washington transferred amounted to \$96,298.20.

In addition to the foregoing, 29 positions, with salaries aggregating \$24,740 per annum, and furniture and other equipment valued at \$9,489.84, were transferred from the Office of the Secretary of Commerce to the Office of the Secretary of Labor, in accordance with the provisions of the acts approved March 4 and May 1, 1913. The 29 positions referred to above do not include one position of clerk at \$1,600 per annum transferred by the appropriation act of March 4, 1913, from the Bureau of Immigration and Naturalization to the Office of the Secretary, effective July 1, 1913, as it was dropped from the Secretary's roll on the same date. This position was included in the total number of positions in the Bureau of Immigration and Naturalization transferred to the Department of Labor under the provisions of the act of March 4, 1913, creating that Department.

The positions transferred were as follows: 2 clerks of class 3 at \$1,600 per annum each, 5 clerks of class 2 at \$1,400 per annum each,

2 clerks of class 1 at \$1,200 per annum each, 2 clerks at \$1,000 per annum each, 1 clerk at \$900 per annum, 1 skilled laborer at \$840 per annum, 2 assistant messengers at \$720 per annum each, 4 laborers at \$660 per annum each, 3 watchmen at \$720 per annum each, 2 messenger boys at \$480 per annum each, and 5 charwomen at \$240 per annum each.

The following is a complete list of all furniture, equipment, etc., transferred from the Office of the Secretary of Commerce to the Office of the Secretary of Labor:

Articles.	Number.	Value.	Articles.	Number.	Value.
Awnings.....	94	\$146.40	Pads.....	14	\$1.73
Base, wood, for hatrack.....	1	1.50	Paste, jar, pint.....	1	.13
Bases, for file cases.....	25	21.41	Pencil-sharpening machines	3	8.07
Baskets.....	13	5.16	Penholders.....	4	.09
Bookcase base and top.....	1	4.09	Perforators, paper.....	6	6.01
Boxes, file, Woodruff.....	16	5.28	Platforms.....	8	4.96
Brackets, fan.....	36	72.00	Portables, electric.....	32	42.20
Cabinets, filing and card-index.....	51	912.92	Prismatic lighting equipment.....	1	96.40
Carpet.....	a 397½	549.66	Racks:		
Cases, storage and miscellaneous.....	78	479.39	Book, desk.....	1	5.00
Cashier, Brandt automatic.....	1	147.00	Hat, bent-wood.....	9	31.50
Chairs.....	33	158.05	Pen.....	7	.42
Checks, door.....	11	30.05	Stamp.....	12	3.64
Clip, board.....	1	.22	Rugs.....	4	95.55
Costumer.....	1	1.25	Rulers, assorted.....	7	1.09
Covers, rubber, typewriter..	2	No charge.	Safe, burglar-proof.....	1	462.50
Cups, sponge.....	15	.69	Screens.....	16	37.00
Cuspidor, nickeled.....	1	2.05	Shades:		
Daters.....	34	64.24	Holophane.....	247	186.26
Desks.....	20	508.07	Window.....	196	187.75
Doors.....	8	109.04	Shears.....	6	1.89
Erasers, steel.....	7	1.75	Shelving, pine.....	c 200	16.00
Extinguishers, fire.....	4	46.40	Shovel, scoop.....	1	1.10
Fans, electric.....	58	611.60	Stamps.....	76	7.36
Fire hoe.....	1	1.60	Stands:		
Fixtures, ceiling.....	20	36.50	Calendar.....	3	.18
Glass, plate, desk top.....	1	3.64	Ink.....	18	1.84
Grill, iron.....	1	117.85	Multigraph.....	1	20.00
Holders.....	5	10.42	Typewriter.....	7	27.10
Horses, "Grace" and "Nellie".....	2	400.00	Umbrella.....	3	4.80
Keys, typewriter.....	b 1	2.45	Stools, assorted.....	5	16.02
Ladders, step.....	2	4.00	Switchboard, telegraph.....	1	40.00
Linoleum.....	a 1,896½	2,286.38	Tables.....	2	58.00
Locker, wood.....	1	5.00	Trays.....	21	10.80
Mats.....	11	66.65	Truck, 4-wheel.....	1	16.20
Mirror, walnut frame.....	1	8.00	Tumblers.....	4	.12
Multigraph, Gammeter, No. 4, with type.....	1	300.00	Typewriters.....	8	736.00
Numbering machines.....	5	62.90	Wardrobes.....	2	60.00
Openers, envelope.....	3	.18	Weights, paper.....	12	1.14
			Towels.....	680	117.20
			Total.....		9,489.84

a Yards.

b Set.

c Feet.

The Department has also transferred to the Department of Labor \$39,600 from its contingent fund and \$84,000 from its printing allotment for the fiscal year ending June 30, 1914.

REMOVAL OF DEPARTMENT.

During the latter part of September and the first few days in October, 1913, the offices of the Secretary of Commerce and the Bureaus of Foreign and Domestic Commerce, Corporations, Lighthouses, Navigation, and Steamboat-Inspection Service, and the Office of the Solicitor were moved to the building erected under contract for the Department at the corner of Nineteenth Street and Pennsylvania Avenue NW. The building is an eleven-story and basement, modern, fireproof structure, is arranged to meet the needs of the offices and bureaus occupying it, and contains approximately 129,000 square feet of available floor space. The task of moving the Department's bureaus and offices into their present quarters was performed with smoothness and expedition and without interruption to the public business. The moving was begun on September 19 and was completed on October 5, 11 days earlier than the time estimated by the contractor who did the moving. There was no delay in the telephone service, as weeks before the moving began each bureau furnished a statement of the telephone equipment required and the telephone company was directed to pull the requisite number of wires through the conduits. Accordingly, a day before a bureau moved into the building the telephone company was instructed to install the equipment already ordered.

In addition to the bureaus above mentioned, the Bureau of Labor Statistics of the Department of Labor is temporarily located in the new building, having been assigned about 10,700 square feet of floor space.

At the present time all the bureaus that were formerly occupying rented buildings, with the exception of the Bureau of the Census, are accommodated in this building. The latter Bureau still occupies its old quarters at the corner of First and B Streets NW. The owners of the Commerce Building have, however, submitted an informal proposition to the Department to build an addition to the present Commerce Building to contain about 50,000 square feet of available floor space, in order that the Bureau of the Census may be housed in the same building with the Office of the Secretary and the other bureaus of the Department except those that are now in Government-owned buildings. The enlarged building would afford sufficient floor space to accommodate the Bureau of the Census, and the additional rent would be paid from the appropriation for the rental of quarters for that Bureau. The removal of the Bureau of the Census into the same building in which the Office of the Secretary

is located would result not only in increased efficiency but in a considerable saving in the cost of maintenance. At the present time it requires about \$36,000 a year to maintain the Census building, whereas the estimated cost of maintaining the proposed addition to the Commerce Building would not exceed \$8,000.

CONSOLIDATION OF STOCK AND SHIPPING SECTIONS.

On moving into its present quarters, the Department consolidated the stock and shipping sections of the Divisions of Publications and Supplies into one section, with ample quarters on the first floor of the building. This combined section has been temporarily placed in charge of a clerk who is under the immediate supervision of the Chief Clerk of the Department. The consolidation has resulted in economy of floor space and will make more efficient the handling and filling of requisitions both from the bureaus in Washington and the various outside services of the Department.

DISBURSING OFFICE.

The itemized statement of the disbursements from the contingent fund of the Department of Commerce and the appropriation for "General expenses, Bureau of Standards," for the fiscal year ended June 30, 1913, required to be submitted to Congress by section 193 of the Revised Statutes of the United States, the itemized statement of expenditures under all appropriations for propagation of food fishes during the fiscal year ended June 30, 1913, required by the act of Congress approved March 3, 1887 (24 Stat., 523), and a statement showing travel on official business by officers and employees (other than the special agents, inspectors, and employees in the discharge of their regular duties, who are required to travel constantly) from Washington to points outside of the District of Columbia during the fiscal year ended June 30, 1913, as required by the act of Congress approved May 22, 1908 (35 Stat., 244), will be transmitted to Congress in the usual form.

APPROPRIATIONS.

The following table shows the total amounts of all annual appropriations for the various bureaus and services of the Department of Commerce and Labor for the fiscal year ended June 30, 1913, of all appropriations made for public works in the various services of the Department which, under the law, may be disbursed without regard to any particular year, and of all permanent, indefinite, and deficiency appropriations. The table shows also appropriations for bureaus transferred to the Department of Labor under the act approved March 4, 1913.

Object of appropriation.	Annual appropriations, 1913.	Appropriations for public works.	Special appropriations and claims.	Total.
Office of Secretary of Commerce and Labor.....	^a \$280,830.00	.....	\$9,771.95	\$290,601.95
Bureau of Corporations.....	254,200.00	.....	.....	254,200.00
Bureau of Foreign and Domestic Commerce.....	176,242.41	.....	.....	176,242.41
Bureau of Standards.....	480,782.66	.....	85,346.48	566,129.14
Bureau of Navigation.....	163,060.00	.....	^b 3,041.21	166,101.21
Steamboat-Inspection Service.....	534,740.00	.....	^b 2.99	534,742.99
Bureau of the Census.....	1,548,742.58	.....	8,186.00	1,556,928.58
Coast and Geodetic Survey.....	1,016,020.00	\$20,000.00	47.74	1,036,067.74
Bureau of Fisheries.....	941,790.00	.....	403,129.91	1,344,919.91
Bureau of Lighthouses.....	5,037,410.00	526,693.00	6,320.68	5,570,423.68
Allotment for printing and binding.....	^c 400,000.00	.....	.....	400,000.00
Total.....	10,833,817.65	546,693.00	515,846.96	11,896,357.61
<i>Amounts of appropriations made for Department of Commerce and Labor for bureaus transferred to Department of Labor, in accordance with act approved Mar. 4, 1913.</i>				
Bureau of Labor.....	280,373.67	.....	.....	280,373.67
Bureau of Immigration and Naturalization.....	2,863,864.45	276,000.00	2,375.11	3,142,239.56
Children's Bureau.....	21,936.45	.....	.....	21,936.45
Total.....	3,166,174.57	276,000.00	2,375.11	3,444,549.68
Grand total.....	13,999,992.22	822,693.00	518,222.07	15,340,907.29

^a Includes \$15,241.48, transferred to Department of Labor.

^b Permanent indefinite appropriations.

^c Includes \$35,047.40 transferred to Department of Labor.

DISBURSEMENTS.

Disbursements by the Disbursing Clerk, Department of Commerce, during the fiscal year ended June 30, 1913, arranged according to items of appropriation, are shown in the table below. This table shows separately the disbursements during the fiscal year on account of bureaus now in the Department of Commerce and bureaus transferred to the Department of Labor, effective March 4, 1913, under the act of Congress approved March 4, 1913.

BUREAUS NOW IN THE DEPARTMENT OF COMMERCE.

OFFICE OF THE SECRETARY.

Salaries, Office of Secretary of Commerce and Labor, 1912-----	\$7,533.85
Salaries, Office of Secretary of Commerce and Labor, 1913-----	155,695.50
Contingent expenses, Department of Commerce and Labor, 1911.....	214.39
Contingent expenses, Department of Commerce and Labor, 1912.....	19,475.34
Contingent expenses, Department of Commerce and Labor, 1913.....	86,015.62
Rent, Department of Commerce and Labor, 1912-----	3,965.11
Rent, Department of Commerce and Labor, 1913-----	44,890.16
Total -----	<u>317,789.97</u>

BUREAU OF CORPORATIONS.

Salaries, Bureau of Corporations, 1912-----	\$3, 316. 78
Salaries, Bureau of Corporations, 1913-----	72, 215. 88
Salaries and expenses, special attorneys, examiners, etc., Bureau of Corporations, 1912-----	8, 078. 41
Salaries and expenses, special attorneys, examiners, etc., Bureau of Corporations, 1913-----	130, 243. 62
Total-----	213, 854. 69

BUREAU OF MANUFACTURES.

Salaries, Bureau of Manufactures, 1912-----	1, 525. 05
Salaries, Bureau of Manufactures, 1913-----	5, 189. 39
Collating tariffs of foreign countries, 1912-----	390. 68
Collating tariffs of foreign countries, 1913-----	9, 535. 85
Salaries and expenses, commercial agents, Department of Commerce and Labor, 1912-----	1, 252. 39
Salaries and expenses, commercial agents, Department of Commerce and Labor, 1913-----	1, 515. 63
Total-----	19, 408. 99

BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

Salaries, Bureau of Foreign and Domestic Commerce, 1913-----	84, 780. 48
Promoting commerce, Department of Commerce and Labor, 1913-----	8, 262. 76
Total-----	93, 043. 24

BUREAU OF STATISTICS.

Salaries, Bureau of Statistics, 1912-----	3, 068. 88
Salaries, Bureau of Statistics, 1913-----	10, 598. 67
Collecting statistics relating to commerce, 1912-----	154. 17
Collecting statistics relating to commerce, 1913-----	534. 44
Total-----	14, 356. 16

BUREAU OF STANDARDS.

Salaries, Bureau of Standards, 1912-----	9, 500. 97
Salaries, Bureau of Standards, 1913-----	217, 006. 63
Laboratory, Bureau of Standards-----	101, 569. 72
Testing machine, Bureau of Standards-----	26, 694. 30
Equipment, Bureau of Standards, 1911-----	3, 505. 00
Equipment, Bureau of Standards, 1912-----	6, 050. 44
Equipment, Bureau of Standards, 1913-----	28, 925. 00
General expenses, Bureau of Standards, 1911-----	4. 65
General expenses, Bureau of Standards, 1912-----	1, 870. 42
General expenses, Bureau of Standards, 1913-----	19, 429. 67
Testing structural materials of the United States-----	8, 350. 00
Testing machine at Pittsburgh, Pa., Bureau of Standards-----	2, 925. 43

Improvement and care of grounds, Bureau of Standards, 1912----	\$318.41
Improvement and care of grounds, Bureau of Standards, 1913----	2,585.72
Investigating effects of electric currents, Bureau of Standards, 1912-----	1,524.42
Investigating effects of electric currents, Bureau of Standards, 1913-----	9,245.73
Testing machines, Bureau of Standards, 1912-----	2,867.05
Testing machines, Bureau of Standards, 1913-----	25,688.37
Testing structural materials, Bureau of Standards, 1912-----	8,802.10
Testing structural materials, Bureau of Standards, 1913-----	69,799.74
Refrigeration constants, Bureau of Standards, 1913-----	9,516.44
Current meter testing tank, Bureau of Standards, 1913-----	1,270.00
Electrical laboratory equipment, Bureau of Standards, 1913-14--	2,160.73
Additional land, Bureau of Standards-----	68,034.00
Total-----	627,644.94

BUREAU OF NAVIGATION.

Salaries, Bureau of Navigation, 1912-----	1,836.71
Salaries, Bureau of Navigation, 1913-----	31,504.82
Salaries, Shipping Service, 1912-----	2,578.87
Salaries, Shipping Service, 1913-----	27,968.63
Clerk hire, Shipping Service, 1912-----	2,899.35
Clerk hire, Shipping Service, 1913-----	29,017.47
Contingent expenses, Shipping Service, 1912-----	2,498.07
Contingent expenses, Shipping Service, 1913-----	6,861.87
Instruments for measuring vessels and counting passengers, 1912--	622.53
Instruments for measuring vessels and counting passengers, 1913--	497.37
Enforcement of navigation laws, 1912-----	7,655.23
Enforcement of navigation laws, 1913-----	9,240.18
Enforcement of wireless communication laws, 1912-----	796.50
Enforcement of wireless communication laws, 1913-----	26,701.30
Total-----	150,228.90

STEAMBOAT-INSPECTION SERVICE.

Salaries, Office of Supervising Inspector General, Steamboat- Inspection Service, 1912-----	610.03
Salaries, Office of Supervising Inspector General, Steamboat- Inspection Service, 1913-----	13,960.53
Salaries, Steamboat-Inspection Service, 1912-----	28,695.20
Salaries, Steamboat-Inspection Service, 1913-----	316,947.99
Clerk hire, Steamboat-Inspection Service, 1912-----	7,070.60
Clerk hire, Steamboat-Inspection Service, 1913-----	74,835.79
Contingent expenses, Steamboat-Inspection Service-----	.20
Contingent expenses, Steamboat-Inspection Service, 1912-----	14,227.64
Contingent expenses, Steamboat-Inspection Service, 1913-----	69,256.76
Total-----	525,604.74

BUREAU OF FISHERIES.

Salaries, Bureau of Fisheries, 1912	\$31,471.69
Salaries, Bureau of Fisheries, 1913	337,236.06
Miscellaneous expenses, Bureau of Fisheries, 1911	91.01
Miscellaneous expenses, Bureau of Fisheries, 1912	55,125.15
Miscellaneous expenses, Bureau of Fisheries, 1913	364,275.77
Protecting seal and salmon fisheries of Alaska, 1911-12	8,648.19
Protecting seal and salmon fisheries of Alaska, 1913	67,301.45
Biological station, Mississippi River Valley	29,093.19
Marine biological station, Florida	59.85
Marine biological station, North Carolina	1,791.06
Steamer <i>Fish Hawk</i> , repairs	8,098.15
Payment to Great Britain and Japan	400,000.00
Protecting the sponge fisheries, 1912	115.00
Protecting the sponge fisheries, 1913	75.55
Philippine fisheries report	2,303.94
Steam vessel for Alaska	13,000.00
Fish hatcheries:	
Kentucky	7,493.39
Puget Sound, Wash	7,479.06
South Carolina	6,376.87
Upper Mississippi River Valley	9,298.16
Wyoming	185.29
Total	<u>1,349,518.83</u>

BUREAU OF THE CENSUS.

Salaries, Bureau of Census, 1913	545,534.08
Collecting statistics, Bureau of Census, 1913	267,770.27
Cotton statistics, Bureau of Census, 1913	31,439.14
Rent, Bureau of Census, 1913	17,500.00
Tabulating machines, Bureau of Census, 1913	23,138.33
Temporary clerks, Bureau of Census, 1913	108,107.99
Expenses of the Thirteenth Census, 1910-12	7,086.55
Expenses of the Thirteenth Census, 1913	13,896.99
Tobacco statistics, Bureau of Census, 1913	11,812.78
Total	<u>1,026,236.18</u>

BUREAU OF LIGHTHOUSES.

Salaries, Bureau of Lighthouses, 1912	2,792.97
Salaries, Bureau of Lighthouses, 1913	61,338.72
Salaries, lighthouse vessels, 1912	50,229.19
Salaries, lighthouse vessels, 1913	400,562.05
Salaries, Lighthouse Service, 1912	18,275.31
Salaries, Lighthouse Service, 1913	197,844.95
General expenses, Lighthouse Service, 1912	395,748.95
General expenses, Lighthouse Service, 1913	858,418.04
Salaries, keepers of lighthouses, 1911	131.00
Salaries, keepers of lighthouses, 1912	45,479.47
Salaries, keepers of lighthouses, 1913	399,259.45

Supplies of lighthouses, 1911	\$1,056.64
Repairs, etc., of lighthouses, 1911	11,685.88
Expenses of buoyage, 1911	1,040.28
Expenses of light vessels, 1911	6,313.61
Maintenance of lighthouse tenders, 1911	73.14
Repairs of light vessels, 1911	185.22
Expenses of fog signals, 1911	3,883.00
Lighting of rivers, 1911	966.42
Aids to navigation, Alaska	6,212.06
Ambrose Channel buoys, N. Y.	50.00
Point Judith lighted buoy, R. I.	1,200.00
Edgemoor lighthouse depot, Del.	14,600.22
Staten Island lighthouse depot, N. Y.	20,756.88
Light keepers' dwellings	4,948.13
Bogue Sound Range Lights, N. C.	126.00
Cape Fear River Lights, N. C.	17,024.67
Detroit River Lights, Mich.	24,070.00
Eagle Point Range Lights, N. J.	292.13
Point Judith Breakwater Lights, R. I.	1,517.80
St. Marys River Range Lights, Mich.	1.50
Superior Pierhead Range Lights, Wis.	18,181.26
Tenders:	
First lighthouse district	489.24
Engineer, third lighthouse district	6,921.53
Engineer, sixth lighthouse district	1,125.92
Inspector, eighth lighthouse district	316.00
Fifteenth lighthouse district	219.50
Light vessels:	
Frying Pan Shoals, N. C.	682.84
Milwaukee, Wis.	17,587.70
Point Abino, Lake Erie	382.31
Relief, ninth and eleventh lighthouse districts	12,561.46
Light stations:	
Brandywine Shoal, Del.	67.58
Buffalo Breakwater North End, N. Y.	15,045.61
Kauai Island, Hawaii	6,976.90
Lincoln Rock, Alaska	10.06
Lloyd Harbor, N. Y.	279.28
Miah Maull Shoal, Delaware Bay	20,281.23
Monhegan Island, Me.	305.62
Negro Point, N. Y.	1,600.04
North Point, N. Y.	7,514.08
Point Loma, Cal.	101.00
Punta Gorda, Cal.	273.04
San Pedro Breakwater, Cal.	20,064.45
Thimble Shoal, Va.	6,787.63
White Shoal, Mich.	1,164.27
Storehouses for oil	1,398.37
Light vessels for general service	792.14
Battery Point fog signal, Wash.	14,140.80
Oil houses for light stations	555.04
Total	2,701,908.58

BUREAUS NOW IN THE DEPARTMENT OF LABOR.

BUREAU OF LABOR.

Salaries, Bureau of Labor, 1912	\$4, 235. 61
Salaries, Bureau of Labor, 1913	67, 185. 81
Miscellaneous expenses, Bureau of Labor, 1910	1, 000. 00
Miscellaneous expenses, Bureau of Labor, 1912	5, 846. 79
Miscellaneous expenses, Bureau of Labor, 1913	40, 648. 72
Library, Bureau of Labor, 1912	82. 88
Library, Bureau of Labor, 1913	499. 78
Medical examination of injured employees, 1912	13. 00
Medical examination of injured employees, 1913	194. 00
Total	<u>119, 206. 59</u>

CHILDREN'S BUREAU.

Salaries, Children's Bureau, 1913	<u>9, 877. 88</u>
-----------------------------------	-------------------

BUREAU OF IMMIGRATION AND NATURALIZATION.

Salaries, Bureau of Immigration and Naturalization, 1912	5, 818. 29
Salaries, Bureau of Immigration and Naturalization, 1913	91, 448. 79
Immigrant stations:	
Boston, Mass	538. 02
Charleston, S. C	34, 172. 99
Ellis Island, N. Y	25, 068. 96
Galveston, Tex	8, 230. 47
New Orleans, La	109, 413. 03
Philadelphia, Pa	72, 926. 98
San Francisco, Cal	12, 827. 06
Expenses of regulating immigration, 1910-11	2, 674. 85
Expenses of regulating immigration, 1911	2, 278. 09
Expenses of regulating immigration, 1912	212, 196. 91
Expenses of regulating immigration, 1913	1, 610, 381. 58
Expenses of regulating immigration (special fund)	149. 98
Miscellaneous expenses, Division of Naturalization, 1911	11. 70
Miscellaneous expenses, Division of Naturalization, 1912	16, 736. 14
Miscellaneous expenses, Division of Naturalization, 1913	118, 329. 24
Payment of fees to Austrian seamen detained at Ellis Island, N. Y	520. 00
Refund to Scandinavian-American Line	13. 50
Payments to Wm. von Forlenger and A. Graham	2, 000. 00
Total	<u>2, 325, 736. 58</u>

RECAPITULATION.

Total disbursements on account of bureaus now in the Department of Commerce	\$7, 039, 645. 22
Total disbursements on account of bureaus now in the Department of Labor	<u>2, 454, 821. 05</u>
Grand total	<u>9, 494, 466. 27</u>

The following statement shows the expenditures during the fiscal year ended June 30, 1913, on account of all appropriations under the control of the Department, giving the total amounts disbursed by the various disbursing officers of the Department and miscellaneous receipts for the same period:

By the Disbursing Clerk, Department of Commerce and Labor, on account of salaries and expenses of the Office of the Secretary of Commerce and Labor, the Bureaus of Corporations, Foreign and Domestic Commerce, Labor, Navigation, Immigration and Naturalization, Standards, Fisheries, and Lighthouses, the Office of the Supervising Inspector General, Steamboat-Inspection Service, expenses of regulating immigration, salaries and expenses of Steamboat-Inspection Service at large, and public works of the Immigration and Fisheries Services (shown in detail in the foregoing table of disbursements)-----	\$9,494,466.27
By the authorized disbursing officers of the Lighthouse Service--	2,638,396.59
By the special disbursing agent, Coast and Geodetic Survey, on account of salaries and expenses of the Coast and Geodetic Survey-----	1,009,095.36
By the disbursing clerk, Bureau of the Census, on account of salaries and expenses of the Bureau of the Census-----	134,856.90
By the special disbursing agents of the Immigration Service-----	18,329.61
By the commercial agents of the Department investigating trade conditions abroad, as special disbursing agents-----	44,966.60
By special disbursing agents, Bureau of Fisheries-----	22,099.11
By customs officers on account of witnesses' fees in steamboat investigations-----	634.15
By warrants drawn on the Treasurer of the United States to satisfy accounts settled by the Auditor for the State and other Departments, classified as follows:.	
Office of the Secretary-----	\$702.13
Bureau of Foreign and Domestic Commerce-----	1,291.23
Bureau of Standards-----	4,923.77
Steamboat-Inspection Service-----	65.50
Bureau of Navigation-----	2,781.36
Bureau of Immigration and Naturalization-----	2,577.36
Bureau of Fisheries-----	9,273.33
Bureau of Lighthouses-----	175,853.82
Bureau of the Census-----	180,086.76
Coast and Geodetic Survey-----	11,305.41
	<u>388,860.67</u>
Total-----	13,751,705.26

MISCELLANEOUS RECEIPTS, FISCAL YEAR 1913.

Coast and Geodetic Survey:

Sale of Charts, Tide Tables, etc-----	\$15,709.88
Sale of property, outside work-----	1,016.84
Bureau of Standards: Standardizing and testing weights, etc---	13,439.48

* To Mar. 4, 1913.

Bureau of Immigration and Naturalization:

Head tax	^a \$2, 767, 402. 00
Exclusive privileges	^a 9, 853. 16
Naturalization fees	^a 191, 361. 00
Telephone rentals, etc.	^a 1, 372. 32
Fines and court costs	^a 43, 493. 85
Bureau of Navigation: Navigation fees	158, 228. 17
Bureau of Fisheries:	
Sale of sealskins	130, 640. 57
Sale of fox skins	20, 505. 17
Proceeds of sale of condemned property, etc., by the Department	46, 320. 66
	3, 399, 343. 10
Other receipts:	
Annual yacht tax	109. 34
Tonnage tax	1, 273, 789. 43
Total	4, 673, 241. 87

BALANCES OF APPROPRIATIONS.

The following unexpended balances of appropriations were turned into the surplus fund June 30, 1913, in accordance with the act of June 20, 1874 (18 Stat., 110-111):

Salaries, Office of Secretary of Commerce and Labor, 1911	\$1, 228. 29
Salaries and expenses, commercial agents, Department of Commerce and Labor, 1911	2, 693. 65
Rent, Department of Commerce and Labor, 1911	2, 524. 81
Contingent expenses, Department of Commerce and Labor, 1911	7, 171. 23
Salaries, Bureau of Corporations, 1911	2, 938. 88
Salaries and expenses, special attorneys, examiners, etc., Bureau of Corporations, 1911	56, 459. 19
Salaries, Bureau of Manufactures, 1911	1, 292. 92
Collating tariffs of foreign countries, 1911	10. 51
Salaries, Bureau of Standards, 1911	11, 887. 73
Equipment, Bureau of Standards (certified claim)	5. 49
Equipment, Bureau of Standards, 1910	16. 79
Equipment, Bureau of Standards, 1911	89. 90
Additional land, Bureau of Standards	16, 966. 00
Testing structural materials, Bureau of Standards, 1911	191. 29
General expenses, Bureau of Standards, 1911	69. 10
Investigating effects of electric currents, Bureau of Standards, 1911	140. 72
Improvement and care of grounds, Bureau of Standards, 1911	214. 43
Weights and measures, Bureau of Standards, 1910-11	918. 11
Salaries, keepers of lighthouses, 1911	130, 938. 61
Salaries, Coast and Geodetic Survey, 1911	5, 412. 78
Party expenses, Coast and Geodetic Survey, 1910-11	9, 805. 77

* These figures include receipts of the Bureau of Immigration and Naturalization for the period from July 1, 1912, to Mar. 4, 1913, the date on which it was transferred to the Department of Labor.

Party expenses, Coast and Geodetic Survey, 1911-----	\$9, 209. 93
General expenses, Coast and Geodetic Survey, 1911-----	453. 06
Pay, etc., of officers and men, vessels, Coast Survey, 1911-----	5, 275. 81
Repairs of vessels, Coast Survey, 1911-----	881. 72
Salaries, Bureau of Fisheries, 1911-----	16, 580. 73
Miscellaneous expenses, Bureau of Fisheries, 1911-----	3, 750. 82
Salaries, agents at seal fisheries in Alaska, 1911-----	432. 50
Supplies for native inhabitants of Alaska, 1911-----	289. 16
Salaries, Bureau of Navigation, 1911-----	530. 00
Instruments for measuring vessels and counting passengers, 1911-----	300. 57
Contingent expenses, Shipping Service, 1911-----	3, 582. 56
Supplies of lighthouses, 1911-----	13, 632. 69
Repairs and incidental expenses of lighthouses, 1910-11-----	1, 279. 31
Repairs and incidental expenses of lighthouses, 1911-----	19, 823. 44
Expenses of light vessels, 1911-----	29, 635. 87
Lighting of rivers, 1911-----	12, 322. 57
Salaries, Bureau of Statistics, 1911-----	865. 15
Collecting statistics relating to commerce, 1911-----	6. 96
Salaries Office of Supervising Inspector General, Steamboat- Inspection Service, 1911-----	161. 11
Salaries, Bureau of Lighthouses, 1911-----	6, 137. 48
Pay of clerks, Lighthouse Service, 1911-----	25, 477. 78
Expenses of buoyage, 1911-----	16, 845. 70
Expenses of fog signals, 1911-----	23, 954. 81
Eagle Point Range Lights, N. J.-----	4. 57
Great Lakes Channel Lights, 1911-----	2, 000. 00
Greenville Channel Lighted Buoy, N. J.-----	9, 000. 00
Neebish Channel Lights, St. Marys River, Mich., 1911-----	2, 541. 84
St. Marys River Range Lights, Mich-----	2, 220. 25
Southeast Shoal Light Vessel, Lake Erie, 1911-----	4, 000. 00
St. Joseph lighthouse depot, Mich-----	5, 354. 03
Staten Island lighthouse depot, N. Y-----	3, 750. 12
Cleveland Harbor Breakwater Light Station, Ohio-----	1, 561. 75
Hinchinbrook Entrance Light Station, Alaska-----	24, 689. 10
Lloyd Harbor Light Station, N. Y-----	7, 708. 31
Lake Borgne Light Station, Miss-----	99. 06
Punta Gorda Light Station, Cal-----	635. 31
Southwest Light Station, Conn-----	26, 523. 34
Split Rock Light Station, Lake Superior-----	2, 622. 54
Maintenance of lighthouse tenders, 1911-----	61, 750. 04
Repairs to lighthouse tenders, 1911-----	2, 289. 13
Repairs to light vessels, 1911-----	19, 809. 69
Total-----	618, 970. 01

BALANCES OF APPROPRIATIONS TRANSFERRED TO THE DEPARTMENT OF LABOR, IN
ACCORDANCE WITH THE PROVISIONS OF THE ACT APPROVED MARCH 4, 1913,
CREATING THE DEPARTMENT OF LABOR.

Bureau of Labor:

Salaries, Bureau of Labor, 1911-----	\$2, 235. 28
Salaries, Bureau of Labor, 1912-----	1, 822. 22
Salaries, Bureau of Labor, 1913-----	35, 097. 86

Bureau of Labor—Continued.

Miscellaneous expenses, Bureau of Labor, 1910.....	\$1,300.00
Miscellaneous expenses, Bureau of Labor, 1911.....	3.33
Miscellaneous expenses, Bureau of Labor, 1912.....	1,167.17
Miscellaneous expenses, Bureau of Labor, 1913.....	23,488.29
Library, Bureau of Labor, 1911.....	3.81
Library, Bureau of Labor, 1912.....	.52
Library, Bureau of Labor, 1913.....	500.22
Medical examination of injured employees, 1911.....	2,751.00
Medical examination of injured employees, 1912.....	2,826.66
Medical examination of injured employees, 1913.....	2,806.00
Commission on industrial relations, 1913.....	100,000.00
International Congress on social insurance.....	10,000.00
Total.....	184,002.36

Children's Bureau: Salaries, Children's Bureau, 1913.....	12,058.57
---	-----------

Bureau of Immigration and Naturalization:

Salaries, Bureau of Immigration and Naturalization, 1911.....	3,961.29
Salaries, Bureau of Immigration and Naturalization, 1912.....	3,861.71
Salaries, Bureau of Immigration and Naturalization, 1913.....	47,415.66
Expenses of regulating immigration, 1911.....	12,692.41
Expenses of regulating immigration, 1912.....	56,046.67
Expenses of regulating immigration, 1913.....	1,049,736.64
Expenses of regulating immigration, 1910-11.....	10,363.19
Expenses of regulating immigration, 1909 and prior years.....	593.07
Expenses of regulating immigration (special fund).....	2,408.89
Immigrant stations—	
Boston, Mass.....	310,178.98
Charleston, S. C.....	3,063.49
Ellis Island, N. Y.....	280,116.91
Galveston, Tex.....	11,824.40
New Orleans, La.....	70,894.54
Philadelphia, Pa.....	81,495.68
San Francisco, Cal.....	43,569.91
Special examiners, etc., Division of Naturalization, 1911.....	4.21
Additional assistants to clerks of courts in naturalization cases.....	1,496.95
Miscellaneous expenses, Division of Naturalization, 1911.....	1,625.42
Miscellaneous expenses, Division of Naturalization, 1912.....	3,110.28
Miscellaneous expenses, Division of Naturalization, 1913.....	82,059.04
Trust fund, Rosa Goldman.....	500.00
Unclaimed funds, Jei Bei Ota.....	2.27
Refund of fine, Rafael Subira.....	20.00
Total.....	2,077,041.61

Salaries, Department of Commerce and Labor, 1913.....	3,013.38
Contingent expenses, Department of Commerce and Labor, 1913.....	12,228.10

Total.....	15,241.48
-------------------	------------------

Grand total.....	2,288,344.02
-------------------------	---------------------

DISBURSEMENTS MADE BY THE DISBURSING CLERK, DEPARTMENT OF COMMERCE, WHILE ACTING AS SPECIAL DISBURSING AGENT, DEPARTMENT OF LABOR, DURING THE PERIOD FROM MARCH 4, 1913, TO AND INCLUDING MAY 5, 1913.

Bureau of Labor Statistics:

Salaries, Bureau of Labor, 1913-----	\$16,348.88
Miscellaneous expenses, Bureau of Labor, 1911-----	3.33
Miscellaneous expenses, Bureau of Labor, 1912-----	.20
Miscellaneous expenses, Bureau of Labor, 1913-----	9,612.20
Library, Bureau of Labor, 1913-----	233.12
Medical examination of injured employees, 1913-----	117.00
Total -----	26,314.73

Bureau of Immigration:

Salaries, Bureau of Immigration and Naturalization, 1913--	23,100.02
Expenses of regulating immigration, 1911-----	1.56
Expenses of regulating immigration, 1912-----	1,187.20
Expenses of regulating immigration, 1913-----	419,111.81
Immigrant stations--	
Ellis Island, N. Y.-----	1,125.92
Galveston, Tex-----	3,362.33
New Orleans, La-----	23,521.88
Philadelphia, Pa-----	3,519.42
San Francisco, Cal-----	8,848.62
Total -----	483,778.76

Bureau of Naturalization:

Miscellaneous expenses, Division of Naturalization, 1912----	1.16
Miscellaneous expenses, Division of Naturalization, 1913----	38,793.47
Total -----	38,794.63

Children's Bureau: Salaries, Children's Bureau, 1913----- 4,273.33

Grand total----- **553,161.45**

APPOINTMENT DIVISION.

STATISTICS RELATING TO THE PERSONNEL.

The accompanying table shows by bureaus the number of positions in the Department on July 1, 1913, and the increase or decrease in each bureau as compared with August 24, 1912. The latter date is used for the reason that the legislative, executive, and judicial and the sundry civil appropriation acts were not approved until August 23 and 24, respectively. The figures do not include the following employments, appointment to which is not made by the Secretary: Crews on vessels in the Coast and Geodetic Survey, which consisted of 468 employments; employments of persons engaged in rodding, chaining, recording, heliotroping, etc., in field parties of the Survey, of which there were 1,300; temporary employments in the field oper-

ations of the Bureau of Fisheries, of which there were 3,988; mechanics, skilled tradesmen, and laborers employed in the Lighthouse Service under the authority of Schedule A, Subdivision I, section 12, of the civil-service rules, of which there were 3,130. Neither do they include 56 employees of the Treasury Department, employed under various statutes, on work for this Department in connection with the field work of the Bureau of Navigation. The total miscellaneous employments thus enumerated were 8,942.

Bureau.	Statutory.	Nonstatutory.	Total.	In District of Columbia.	Outside District of Columbia.	Increase (+) or decrease (-).
Office of the Secretary.....	a 139	-----	139	139	-----	- 19
Bureau of the Census.....	621	755	1,376	b 657	719	+ 41
Bureau of Corporations.....	63	64	127	b 127	-----	- 2
Bureau of Foreign and Domestic Commerce.....	83	25	108	89	19	+ 13
Bureau of Standards.....	230	82	c 312	272	40	+ 32
Bureau of Fisheries.....	392	6	398	81	317	+ 1
Bureau of Lighthouses.....	57	5,567	5,624	41	d 5,583	+ e 508
Coast and Geodetic Survey.....	246	101	347	b 264	83	+ 3
Bureau of Navigation.....	40	55	95	29	66	+ 13
Steamboat-Inspection Service.....	194	68	262	9	253	-----
Total.....	2,065	6,723	f 8,788	1,708	7,080	+ g 590

a Includes 13 positions transferred to the Department of Labor, Oct. 16, 1913.

b Employees engaged in work in the field for a part of each year with headquarters in Washington are treated as within the District of Columbia.

c Does not include 5 members of the visiting committee.

d Includes the following positions, appointment to which is not made by the head of the Department: 1,575 laborers in charge of post lights, 1,152 members of crews of vessels, and 448 mechanics, skilled tradesmen, and laborers employed in field construction work in the Lighthouse Service and work of a similar character at the general lighthouse depot at Tompkinsville, N. Y.

e The increase (508) in the Lighthouse Service is due principally to the inclusion of 448 mechanics, skilled tradesmen, and laborers referred to above and not included in the table of positions as of Aug. 24, 1912.

f The total number of positions (8,788) shows a decrease of 1,176 as compared with the total of 9,964 shown as of Aug. 24, 1912, in the last annual report. This decrease is accounted for by the transfer on Mar. 4, 1913, and May 1, 1913, by operation of law, of 1,814 positions to the Department of Labor; 1,798 of these positions being embraced in the Bureau of Labor, Bureau of Immigration and Naturalization, and the Children's Bureau, a net increase of 32 positions in these bureaus over the total of 1,766 positions, reported in the last annual report; 16 positions transferred from the Office of the Secretary and shown in the above table as a part of the decrease (see note g); and the net increase of 590 positions reported in this table.

g Decrease 21, increase 611, leaving a net increase of 590. The largest decrease was in the Office of the Secretary, and was due to the abolishment of 6 positions Sept. 30, 1912, under the provisions of section 8, of the act of Aug. 23, 1912 (work transferred to the Public Printer), and 16 positions transferred May 1, 1913, to the Department of Labor, under the provisions of the act of May 1, 1913. The authorization of 3 new positions effective July 1, 1913, under the provisions of the act of Mar. 4, 1913, makes a net decrease of 19 positions. (One position of clerk at \$1,600 per annum transferred by the appropriation act of Mar. 4, 1913, from the Bureau of Immigration and Naturalization to the Office of the Secretary, effective July 1, 1913, is not included in the foregoing table, as it was dropped from the Secretary's roll on the same date. This position was included in the total number of positions in the Bureau of Immigration and Naturalization transferred to the Department of Labor under the provisions of the act of Mar. 4, 1913, creating that Department.)

PERSONNEL TRANSFERRED TO THE DEPARTMENT OF LABOR.

The following table shows the bureaus and the number of positions in the Department which were transferred by law (acts approved Mar. 4, 1913, and May 1, 1913) to the Department of Labor. The figures do not include emergency employments, appointment to which is not made by the Secretary, such as guards, interpreters, stenographers, etc., in the field service of the Bureau of Immigration and Naturalization, of which there were 1,029 during the period from July 1, 1912, to the close of February 28, 1913.

Bureau.	Statutory.	Nonstatutory.	Total.	In District of Columbia.	Outside District of Columbia.	Increase (+) or decrease (-).
TRANSFERRED MAR. 4, 1913.						
Bureau of Labor.....	71	20	a 91	b 91	.....	- 2
Bureau of Immigration and Naturalization:						
Bureau proper.....	43	.....	43	43	.....	.....
Division of Information.....	12	.....	12	12	.....	.....
Division of Naturalization.....	45	c 72	117	45	d 72	+ 10
Immigration Service.....	.....	1,520	e 1,520	f 5	b 1,515	+ 24
Children's Bureau.....	15	.....	15	b 15	.....	.....
TRANSFERRED MAY 1, 1913.						
Office of the Secretary.....	16	.....	g 16	16	.....	.....
TRANSFERRED OCT. 16, 1913.						
Office of the Secretary.....	13	.....	13	13	.....	.....
Total.....	215	1,612	1,827	240	1,587	+ h 32

a Does not include 1 temporary special agent and 1 temporary clerk (both nonstatutory).

b Employees engaged in work in the field for a part of each year with headquarters in Washington are treated as within the District of Columbia.

c Includes 4 vacancies; 1 temporary clerk (lump-sum appropriation) not included.

d Includes 2 with headquarters in Washington for local field duty.

e Includes 38 vacancies. Does not include 15 temporary employees (job employments), nor 30 positions filled by employees who were connected with other services of the Government and employed occasionally on work for this Department. Does not include 12 employees appointed under the provisions of section 24 of the immigration act of Feb. 20, 1907.

f Detailed to the Bureau in accordance with special provisions of law.

g Does not include 1 position of clerk at \$1,600 per annum. (See note g in preceding table.)

h Net increase over total for the bureaus on Aug. 24, 1912, shown in last annual report.

CHANGES IN THE PERSONNEL.

The table following gives a summary of the changes in the personnel of the Department during the fiscal year ended June 30, 1913, not including the bureaus transferred to the Department of Labor.

APPOINTMENTS.*

Bureau.	Permanent.				Tempo- rary.	Total.
	Competi- tive.	Excepted.	Unclassi- fied.	Total.		
Office of the Secretary.....	22	2	11	35	12	47
Bureau of the Census.....	123	.....	89	212	388	600
Bureau of Corporations.....	21	4	1	26	5	31
Bureau of Foreign and Domestic Com- merce ^b	13	18	4	35	7	42
Bureau of Standards.....	65	.....	4	69	25	94
Bureau of Fisheries.....	38	10	16	64	1	65
Bureau of Lighthouses.....	340	78	1	419	115	534
Coast and Geodetic Survey.....	51	1	.....	52	54	106
Bureau of Navigation.....	23	7	.....	30	28	58
Steamboat-Inspection Service.....	12	.....	1	13	1	14
Total.....	708	120	127	955	636	1,591

SEPARATIONS AND MISCELLANEOUS CHANGES.

Bureau.	Separations. ^c						Miscella- neous changes. ^d
	From permanent positions.				From tempo- rary posi- tions.	Total.	
	Competi- tive.	Excepted.	Unclassi- fied.	Total.			
Office of the Secretary.....	55	2	9	66	12	78	52
Bureau of the Census.....	77	2	93	172	386	558	588
Bureau of Corporations.....	19	5	1	25	7	32	53
Bureau of Foreign and Domes- tic Commerce ^b	21	10	.....	31	5	36	45
Bureau of Standards.....	69	.....	1	70	22	92	149
Bureau of Fisheries.....	33	6	23	62	3	65	59
Bureau of Lighthouses.....	362	38	.....	400	99	499	865
Coast and Geodetic Survey.....	56	.....	2	58	43	101	157
Bureau of Navigation.....	11	7	.....	18	27	45	68
Steamboat-Inspection Service..	13	.....	1	14	1	15	12
Total.....	716	70	130	916	605	1,521	2,048

* Includes appointments under Executive orders, reinstatements, transfers within the Department, transfers to the Department from other departments or independent establishments, and presidential appointments.

^b Includes changes in the Bureau of Manufactures and the Bureau of Statistics before their consolidation into the Bureau of Foreign and Domestic Commerce on Aug. 23, 1912.

^c Includes separations by removals without prejudice or on charges, resignations, deaths, discontinuance of probationary appointees, transfers within the Department or from the Department to other departments or independent establishments.

^d Includes promotions; reductions; changes of appropriation, designation, name, or station; cancellation of appointment certificates, etc.

The following table gives a summary of the changes in the personnel of the bureaus which were transferred to the Department of Labor in accordance with the provisions of the act of March 4, 1913, for the period from July 1, 1912, to February 28, 1913:

APPOINTMENTS.^a

Bureau.	Permanent.				Temporary.	Total.
	Competitive.	Excepted.	Unclassified.	Total.		
Bureau of Immigration.....	89	29	27	145	67	212
Division of Naturalization.....	16	-----	-----	16	4	20
Bureau of Labor.....	-----	-----	-----	-----	12	12
Children's Bureau.....	16	1	1	18	1	19
Total.....	121	30	28	179	84	263

SEPARATIONS AND MISCELLANEOUS CHANGES.

Bureau.	Separations. ^b						Miscellaneous changes. ^c
	From permanent positions.				From temporary positions.	Total.	
	Competitive.	Excepted.	Unclassified.	Total.			
Bureau of Immigration.....	81	36	21	138	53	191	316
Division of Naturalization..	12	.....	.....	12	4	16	65
Bureau of Labor.....	2	.....	.....	2	13	15	21
Children's Bureau.....	3	.....	.....	3	1	4	.....
Total.....	98	36	21	155	71	226	402

^a Includes appointments under Executive orders, reinstatements, transfers within the Department, transfers to the Department from other departments or independent establishments, and presidential appointments.

^b Includes separations by removals without prejudice or on charges, resignations, deaths, discontinuance of probationary appointees, transfers within the Department or from the Department to other departments or independent establishments.

^c Includes promotions; reductions; changes of appropriation, designation, name, or station; cancellation of appointment certificates, etc.

TEMPORARY APPOINTMENTS IN THE BUREAU OF THE CENSUS.

In addition to the regular force provided for the Bureau of the Census in the legislative, executive, and judicial appropriation act approved August 23, 1912, that act authorized the appointment for such time as might be necessary, but not beyond June 30, 1913, of not exceeding 175 temporary clerks from among the employees of the Thirteenth Census force, such clerks to be paid salaries not greater than \$900 per annum or on a piece-price basis. For the payment of the compensation of these clerks the sum of \$120,000 was appropriated. The limitation placed on the number of temporary clerks thus

authorized was removed by a provision in the legislative, executive, and judicial appropriation act approved March 4, 1913, but no additional amount was appropriated. Under this authority the Department increased the number of temporary clerkships to 275. As there were about 3,000 former Thirteenth Census employees who were eligible for appointment to these positions, it was obviously desirable to establish some plan which would properly and economically restrict the selections to a small group of eligibles, and, while not legally necessary, it was also deemed desirable to apportion the appointments as far as practicable among the various States and the District of Columbia according to population. With these ends in view, the following regulations were adopted:

1. Appointments were apportioned among the States and the District of Columbia according to population, preference being given to those persons who were immediately available (in the District of Columbia or within a radius of 20 miles from the center thereof). In the event any State was unable to supply its quota, selections were made from the State which, in the opinion of the Bureau, furnished the most desirable candidates.

2. Further preference was given those having had sufficient experience in operating tabulating, sorting, or punching machines to make them familiar with such work.

3. In general, those having the highest efficiency ratings during their Thirteenth Census employment were given preference subordinate to that given in regulations 1 and 2.

4. Entrance salary was \$720 per annum, without promise of promotion.

5. Leave regulations were the same as for the Thirteenth Census force, namely, annual and sick leave accrued at the rate of $2\frac{1}{2}$ days a month, all sick leave to be supported by a doctor's certificate.

6. Appointments contained a clause limiting service to June 30, 1913, but subject to termination at any time.

PRESIDENTIAL POSITIONS.

The following table shows the presidential positions in the Department on July 1, 1913. Those marked with an asterisk (*) do not require confirmation by the Senate. There was a reduction of 18 presidential positions during the year, caused by the transfer of 10 positions to the Department of Labor and by a change in the manner of making appointment to 8 in the Alaskan Service of the Bureau of Fisheries. These positions are shown in subsequent tables.

Position.	Compensation.	Tenure.	Authority.
Secretary of Commerce.....	\$12,000	Indefinite.....	32 Stat., 825.
* Assistant Secretary of Commerce.....	5,000	do.....	Do.
Director of the Census.....	6,000	do.....	32 Stat., 51.
* Commissioner of Corporations.....	5,000	do.....	32 Stat., 827.
Deputy Commissioner of Corporations.....	3,500	do.....	Do.

Position.	Compensation.	Tenure.	Authority.
Chief of Bureau of Foreign and Domestic Commerce.	\$4,000	Indefinite.....	Act Aug. 23, 1912.
Assistant Chief of Bureau of Foreign and Domestic Commerce.	3,000	do.....	Do.
Do.....	2,750	do.....	Do.
Director of the Bureau of Standards.....	6,000	do.....	31 Stat., 1449.
Commissioner of Fish and Fisheries.....	6,000	do.....	25 Stat., 1.
Deputy Commissioner of Fisheries.....	3,500	do.....	32 Stat., 1102.
* Commissioner of Lighthouses.....	5,000	do.....	36 Stat., 827.
* Deputy Commissioner of Lighthouses.....	4,000	do.....	Do.
* Chief Constructing Engineer, Bureau of Lighthouses.	4,000	do.....	Do.
* Superintendent of Naval Construction, Bureau of Lighthouses.	3,000	do.....	Do.
Superintendent of the Coast and Geodetic Survey	6,000	do.....	25 Stat., 949.
Commissioner of Navigation.....	4,000	do.....	23 Stat., 118.
Supervising Inspector General, Steamboat-Inspection Service.	4,000	do.....	R. S., 4402.
Ten supervising inspectors of steam vessels (with headquarters at San Francisco, Cal.; New York, N. Y.; Norfolk, Va.; St. Louis, Mo.; Boston, Mass.; Louisville, Ky.; Pittsburgh, Pa.; Detroit, Mich.; Cleveland, Ohio; and New Orleans, La.), each.	3,000	do.....	R. S. 4404.

The following presidential positions were transferred to the Department of Labor, effective March 4, 1913, by the act approved March 4, 1913, creating that Department:

Position.	Compensation.	Tenure.	Authority.
Commissioner of Labor Statistics.....	\$5,000	Term of 4 years unless sooner removed.	25 Stat., 182.
Commissioner General of Immigration.....	5,000	Indefinite.....	28 Stat., 780.
Commissioner of immigration at the ports of--			
New York, N. Y.....	6,500	Term of 4 years unless sooner removed and until successor is appointed.	28 Stat., 391.
Baltimore, Md.....	4,000	do.....	Do.
Boston, Mass.....	4,000	do.....	Do.
Philadelphia, Pa.....	4,000	do.....	Do.
San Francisco, Cal.....	4,000	do.....	Do.
San Juan, P. R.....	3,600	do.....	Do.
Seattle, Wash.....	4,000	do.....	Do.
Chief of the Children's Bureau.....	5,000	Indefinite.....	Act Apr. 9, 1912.

The sundry civil appropriation act approved June 23, 1913, provided that appointments to the following-named positions, which had theretofore been made by the President and confirmed by the Senate, be made by the Secretary of Commerce.

Position.	Compensation.	Tenure.	Authority.
Agent, Alaska salmon fisheries.....	\$2,500	Indefinite.....	33 Stat., 478.
Assistant agent, Alaska salmon fisheries.....	2,000	do.....	Do.
Do.....	1,800	do.....	36 Stat., 1439.
Warden, Alaska service.....	1,200	do.....	Do.
Deputy warden, Alaska service (4 positions).....	900	do.....	Do.

^a The compensation of these positions was increased from \$600 to \$900 per annum, effective July 1, 1913.

CREATION OF THE BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

The act making appropriation for the legislative, executive, and judicial expenses of the Government for the fiscal year ending June 30, 1913, approved August 23, 1912, consolidated the Bureau of Manufactures and the Bureau of Statistics into a bureau, to be known as the Bureau of Foreign and Domestic Commerce. The positions authorized for the new bureau as compared with those provided for the Bureaus of Manufactures and Statistics for the preceding fiscal year, as well as the increases and decreases in the various classes of positions, are shown in the following table:

Position.	Bureau of Foreign and Domestic Commerce.		Bureau of Manufactures.		Bureau of Statistics.		Increase.		Decrease.	
	No.	Salary.	No.	Salary.	No.	Salary.	No.	Salary.	No.	Salary.
Chief of Bureau.....	1	\$4,000	1	\$4,000	1	\$4,000			1	\$4,000
Assistant Chief of Bureau.....	1	3,000					1	\$3,000		
Do.....	1	2,750					1	2,750		
Do.....			1	2,500					1	2,500
Chief of Division of Consular Reports.....	1	2,500					1	2,500		
Chief of division.....			1	2,100					1	2,100
Do.....					1	2,000			1	2,000
Chief clerk.....	1	2,250			1	2,250				
Stenographer to Chief of Bureau.....	1	1,600	1	1,600						
Clerks, class 4.....	7	1,800	2	1,800	5	1,800				
Clerks, class 3.....	5	1,600	2	1,600	5	1,600			2	1,600
Clerk.....	1	1,500			1	1,500				
Clerks, class 2.....	11	1,400	3	1,400	9	1,400			1	1,400
Clerks, class 1.....	14	1,200	4	1,200	11	1,200			1	1,200
Clerks.....	17	1,000	4	1,000	13	1,000				
Do.....	11	900	5	900	6	900				
Messenger.....	1	840			1	840				
Assistant messengers.....	5	720	2	720	1	720	2	720		
Laborers.....	4	660	1	660	1	660	2	660		
Laborer.....	1	480			1	480				
Total.....	83	104,860	27	36,600	57	73,650	7	11,010	8	16,400

^a Net decrease of 1.

^b Net decrease of \$5,390.

In addition to the reduction of \$5,390 in the appropriation for the statutory force, indicated above, the \$4,000 appropriation for the collection of facts relating to the internal and foreign commerce of the United States, under which one chief of division at \$2,500 per annum and one clerk at \$1,200 per annum had been employed in the Bureau of Statistics, was not provided for after August 23, 1912. Thus the total reduction in expenditures for salaries was \$9,090.

In view of the reduction in the number of positions in the higher classes, it was necessary to make a readjustment of the forces of the two bureaus, which resulted in the appointment of one chief of division as commercial agent, the demotion of one chief of division and 19 clerks, and the transfer of three clerks to the Bureau of the Census.

EFFICIENCY RECORDS.

The first step toward securing efficiency records in the Department was taken in March, 1906, when the Civil Service Commission, by direction of the President, requested each executive department and independent bureau to furnish full lists of all superannuated employees, with information as to their efficiency ratings and how many of them were veterans. These lists, with the ratings, were obtained from the bureaus of this Department and promptly transmitted to the Civil Service Commission. Later in the year the Department decided to obtain the same information in regard to the efficiency of all of its officers and employees below the presidential class, regardless of the superannuation and the military or naval feature involved in the previous investigation. The ratings thus obtained were used to a considerable extent in considering recommendations for promotion. In each of the investigations made in 1906 the efficiency records were based solely upon the judgment and reports of the bureau officers.

A second investigation into the efficiency of the personnel of the Department was conducted in the summer of 1909, and a third during the summer of 1911. The efficiency ratings thus established were consulted whenever recommendations for promotions were received, and if it appeared that employees not having the highest ratings were recommended for advancement the bureau officers were called upon for a statement of the reasons for the action proposed.

By section 4 of the act approved August 23, 1912 (legislative, etc., appropriation act for the fiscal year 1913), Congress has by implication apparently taken out of the hands of the several executive departments the work of maintaining efficiency records for the classified service (at least in the District of Columbia) and placed it under the Civil Service Commission. As a later act, approved March 4, 1913,

provided that the Commission should investigate and report to the President, with its recommendations, with respect to the administrative needs of the service relating to personnel in the several executive departments and independent establishments in the District of Columbia, and report to Congress details of expenditure and of progress of work at the beginning of each regular session, it did not appear entirely feasible or desirable to make a separate investigation into the efficiency of employees of this Department immediately prior to that to be made by the Commission. For present purposes the latest efficiency records, compiled in the summer of 1911, are used as the basis for promotions, care being taken to see that any changed conditions in the personnel caused by the lapse of time are taken into account. It is the aim of the Department to see that in each case the person promoted is, of the class in which he is employed, the one most entitled to advancement.

PROMOTIONS.

It is the policy of the Department to fill vacancies by the promotion of employees from the classes below. The lowest class, if not filled by transfer or reinstatement, is filled by selection from the civil-service registers. It is desirable that this policy be continued, for the reason that it will inspire the working force with the sense that their interests are considered and assure them that by faithful service they will be given fair consideration in connection with such opportunities for advancement as may occur.

During the year the Department's Chief Clerk and Superintendent resigned and, in keeping with the policy outlined, the vacancy was filled by the promotion of one of the division chiefs in the Office of the Secretary, and the resulting vacancies down to the lowest class were similarly filled. A deputy chief of a bureau was appointed as head of the bureau to fill a vacancy, and a local inspector of boilers was appointed as supervising inspector of a district in the Steamboat-Inspection Service, both of the vacancies being in presidential grades.

LAW OF APPORTIONMENT.

In the early part of this year the President's Commission on Economy and Efficiency submitted to the President a special report on the apportionment of appointments in the departments at Washington, as provided for in the following provision of section 2 of the civil-service act of January 16, 1883:

Appointments to the public service * * * in the departments at Washington shall be apportioned among the several States and Territories and the District of Columbia upon the basis of population as ascertained at the last preceding census.

The same section of the act also provides that appointments are to be so apportioned "as nearly as the conditions of good administration will warrant."

The President's Commission in its report objected not so much to the law itself as it did to its interpretation and application by the Civil Service Commission. Among other things it stated:

After an exhaustive study of the records of the Civil Service Commission and of the evidence which was obtained from the departments * * *, the President's Commission has come to the conclusion that the interpretation which has been given to the act by the Civil Service Commission has been such as practically to defeat its primary purpose; that instead of giving to applicants the benefit of competitive examinations, and instead of giving to the service the benefit of rules adopted for "testing the fitness of applicants"; instead of making available to the Government persons who had by the rules established been given a rating of superior merit, every "condition of good administration" has been made subordinate and subservient to demands that can find no explanation except a desire to continue a system which the law was designed to supplant. Practically the only effect of the law as interpreted had been to eliminate from the possibility of appointment to positions in the classified service such persons as had entirely failed to obtain any standing whatever, i. e., to obtain an average above the passing mark.

For many reasons it is doubtless desirable to have employees of the civil branch of the Government represent the various States and sections of the country, but it is more than doubtful whether such a policy is of sufficient importance to wholly outweigh the tests which are now provided to determine the merit and qualifications of applicants for the service. In any event, it has been found to be impossible, notwithstanding the efforts of the Civil Service Commission, to maintain even an approximate equilibrium between the number of appointments to which the States are entitled and those which they actually receive. If the provision of law requiring the apportionment of appointments is to continue in force, the Department concurs in the view expressed by the President's Commission that it should be regarded as being only coordinate with the provisions contained in the same section of the civil-service act which requires that selections shall be made "according to grade from among those graded highest as the results of * * * competitive examinations." Either the repeal of the law requiring the apportionment of appointments or its subordination to that providing for the selection of persons from among those graded highest in open competitive examinations, would result in the vitalization of the whole civil-service system. It certainly is not in the interest of good administration to require an appointing officer to make a selection from a certificate of eligibles with comparatively low ratings, say from 70 to 75, when there are eligibles on the register with ratings from 5 to 10 points higher.

The law of apportionment also applies to all transfers from the nonapportioned to the apportioned service, whether intradepartmental or interdepartmental. In a number of instances the Department has been inconvenienced because the Civil Service Commission has not felt at liberty to authorize transfers from the nonapportioned to the apportioned service on the ground that the persons whose transfers were requested were residents of States or Territories which had received an excessive share of appointments. Under the provisions of clause (c), section 8, of civil-service Rule X, the Commission has authority to waive the apportionment upon the certificate of the appointing officer that the transfer requested is in the interest of good administration, and setting forth in detail the reasons therefor. It is believed that the appointing officer should be the sole judge as to the qualifications of a person whom he desires to transfer to his department, and that a certificate to the effect that the transfer is in the interest of good administration should be accepted as sufficient ground for action.

SUPERANNUATION AND RETIREMENT.

The problem of utilizing the services of aged employees to the best advantage is constantly becoming more difficult of solution. The growing volume of work, the demand for increased efficiency, and the introduction of new methods and ideas require the services of men and women whose minds are active and capable of development. It seems inconsistent that the Government should expend large sums of money in attempting to procure properly equipped eligibles to enter its employ and at the same time retain on its rolls those who have long passed their usefulness. The heads of bureaus are reluctant to discontinue the services of superannuated clerks, for to do so would in most cases deprive the latter of their only source of income. Demotion is but a palliation, and does not fully meet the difficulties of the case. It would therefore seem to be only just to provide in some manner for the retirement of such employees on annuities at least partly commensurate with the rates of pay which they have been receiving. In some cases the reduction of force possible through the greater efficiency of younger men and women would go far to meet the cost of these annuities.

LIGHTHOUSE SERVICE.

The placing of the Lighthouse Service upon a civilian basis has been practically completed. During the fiscal year 1913 civilian inspectors replaced the Navy officers in charge of the ninth, eleventh, twelfth, and nineteenth districts, the only districts which remained in charge of such officers. The thirteenth, fourteenth, and fifteenth districts, which include the Mississippi River and its tributaries, are

still under the supervision of Army engineers, the act of June 17, 1910, providing for a Bureau of Lighthouses and for other purposes, having authorized the President to assign Army engineers to act in lieu of civilian inspectors in those districts for an indefinite period.

On January 28, 1913, the Department adopted new regulations for the Lighthouse Service, the effect of which was to place all civil-service matters pertaining to noneducational competitive classified positions in this service under the direct supervision of the district secretaries of the Civil Service Commission.

DIVISION OF PUBLICATIONS.

VOLUME AND COST OF PRINTING.

The regular allotment to the Department for printing and binding for the fiscal year 1913 was \$400,000, which was an increase of \$25,000 over that for the previous year. This increase was granted by Congress in order that the printing and binding for the Bureau of the Census (except that in connection with inquiries of the Thirteenth Decennial Census), which had since 1909 been paid for from lump appropriations for the Thirteenth Census, could be paid for from the allotment to the Department. Of the \$400,000 thus made available, \$399,996.86 was expended, leaving an unexpended balance of \$3.14. Of the total allotment to the Department, \$76,750 was suballotted on August 30, 1912, to the several bureaus, offices, and services transferred to the Department of Labor by the act of March 4, 1913, creating that Department. Of the \$76,750 so suballotted there was expended for those bureaus, offices, and services up to May 5, 1913, \$41,702.60, leaving a balance of \$35,047.40, which amount was transferred to the Department of Labor on May 9, 1913.

In addition to the \$399,996.86 expended from the general allotment for 1913, the Department furnished printing and binding to the Bureau of Navigation for the Radio Service costing \$1,716.58, for which it was reimbursed from the appropriation "Enforcement of wireless communication laws, 1913"; also it furnished work to the Bureau of the Census costing \$5,011.48, of which \$383.29 was reimbursed from the appropriation "Tobacco statistics, Bureau of the Census, 1913," and \$4,628.19 was reimbursed from the appropriation "Cotton statistics, Bureau of the Census, 1913." These additional expenditures aggregated \$6,728.06 and made a grand total of \$406,724.92 expended by the Department during the year, as compared with a total of \$374,995.64 in 1912.

The increase in expenditures in 1913 over 1912 was \$31,729.28. The total expenditures in 1913, however, include \$38,270.24 for the Bureau of the Census, while the figures for 1912 are exclusive of expenditures for that Bureau, printing and binding for which in 1912 was paid for from appropriations for the Thirteenth Decennial

Census. Deducting expenditures for the Bureau of the Census in 1913 and comparing the remainder (\$368,454.68) with expenditures for all the other bureaus, offices, and services of the Department in 1912 (\$374,995.64) shows that there was a decrease of \$6,540.96 in such expenditures. Carrying the comparison still further and omitting also expenditures in both years for the bureaus, offices, and services transferred to the Department of Labor, there was a decrease of \$8,963.07. The suballotments in 1913 to the several branches of the Department of Labor totaled \$2,422.11 more than their expenditures in 1912.

During the fiscal year 1913 the Department issued on the Public Printer 3,634 requisitions for printing and binding, as compared with 3,466 during the preceding fiscal year, an increase of 168. The number for 1913 includes requisitions covering work ordered only up to and including May 5, 1913, for the bureaus, offices, and services transferred to the Department of Labor.

The following statement shows the amount and cost of each class of work called for by requisitions on the Public Printer during the fiscal year 1913, and affords a comparison with the amount and cost of these classes during the preceding two fiscal years:

Class.	1911		1912		1913 ^a	
	Number.	Cost.	Number.	Cost.	Number.	Cost.
Blank forms.....	12,378,007	\$51,369.94	12,269,911	\$51,112.95	13,102,505	\$44,791.41
Reports, pamphlets, etc.....	5,276,080	269,387.99	6,935,745	288,017.67	7,452,145	295,746.69
Letterheads.....	2,254,000	4,209.92	2,110,000	3,830.71	2,101,500	3,247.41
Envelopes.....	698,250	175.10	46,225	156.19	48,045	173.70
Circulars, decisions, and notices..	370,525	2,986.76	308,450	1,882.06	158,650	820.00
Index cards.....	1,644,500	1,397.56	689,200	692.25	854,900	782.26
Guide cards and folders.....	623,310	2,352.07	595,150	1,826.50	205,900	1,126.57
Memorandum sheets.....	3,506,700	2,665.06	1,156,400	1,252.48	4,699,600	2,340.84
Blank books.....	28,069	30,103.46	19,113	23,064.25	30,818	16,081.81
Miscellaneous books (binding)...	2,858	5,448.64	1,355	2,532.35	3,206	5,003.34
Miscellaneous.....		71.25		628.23		1,563.49
Transferred to Department of Labor on May 9, 1913.....						35,047.40
Total.....		370,167.75		374,995.64		^c 406,724.92

^a Figures in these columns are for the several classes of work for the Department of Commerce and Labor from July 1, 1912, to Mar. 4, 1913; for the Department of Commerce from Mar. 5, 1913, to June 30, 1913; and for the Department of Labor from Mar. 5, 1913, to May 5, 1913.

^b Of these, 40,000 were synopsis envelopes for the Customs Service, which in 1912 and 1913 are included in blank forms.

^c Of this sum \$6,728.06 covers printing and binding done for the Bureau of Navigation and the Bureau of the Census for which the Department's allotment was reimbursed.

The table following shows the cost of printing and binding for each of the bureaus, offices, and services of the Department during the fiscal years 1912 and 1913, together with the increase or decrease for each bureau, office, and service and the estimated cost of the work on hand but not completed June 30, 1913.

Bureau, office, or service.	Cost of work delivered.		Increase (+) or decrease (-).		Estimated cost of work not completed June 30, 1913.
	1912	1913	Cost.	Per cent.	
Office of the Secretary.....	\$12,900.75	\$19,408.28	+\$6,507.53	+ 50.44	\$1,571.71
Appointment Division.....	401.13	396.05	- 5.08	- 1.27	36.18
Disbursing Office.....	756.06	1,133.42	+ 377.36	+ 49.91	164.19
Division of Supplies.....	261.01	363.75	+ 102.74	+ 39.36	3.50
Bureau of Corporations.....	9,299.40	11,524.50	+ 2,225.10	+ 23.93	56.95
Bureau of Foreign and Domestic Commerce.....	145,778.58	142,818.07	- 2,960.51	- 2.03	8,586.07
Coast and Geodetic Survey.....	31,267.82	26,526.52	- 4,741.30	- 15.16	4,757.98
Bureau of Fisheries.....	9,740.45	12,897.91	+ 3,157.46	+ 32.42	1,896.86
Bureau of Navigation.....	12,321.44	12,130.37	- 191.07	- 1.55	96.00
Shipping Service.....	2,669.20	2,032.81	- 636.39	- 23.84	322.59
Radio Service.....	88.57	1,102.21	+ 1,013.64	+1,144.45	123.59
Office, Supervising Inspector General.....	4,278.54	2,456.71	- 1,821.83	- 42.58	6.31
Steamboat-Inspection Service.....	10,630.73	6,767.34	- 3,863.39	- 36.34	1,316.95
Bureau of Lighthouses.....	18,168.35	20,219.62	+ 2,051.27	+ 11.29	1,407.37
Lighthouse Service.....	9,223.16	6,716.44	- 2,506.72	- 27.18	876.94
Bureau of Standards.....	20,475.67	18,278.49	- 2,197.18	- 10.73	3,187.20
Customs Service.....	12,406.89	6,932.19	- 5,474.70	- 44.13	2,996.90
Bureau of the Census.....	(c)	38,270.24			5,252.91
Total, Department of Commerce.....	300,667.75	329,974.92	+29,307.17	+ 9.75	32,660.20
Bureaus, offices, and services transferred to Department of Labor.....	74,327.89	76,750.00	+ 2,422.11	+ 3.26	.....
Grand total.....	374,995.64	406,724.92	+31,729.28	+ 8.46	.....

a This amount was expended jointly during 1912 by the Bureau of Manufactures and the Bureau of Statistics, which were consolidated into the Bureau of Foreign and Domestic Commerce on Aug. 23, 1912.

b Of this amount \$1,716.58 covers printing done for the Radio Service, and the Department's allotment for printing and binding was reimbursed to that extent.

c Printing and binding for the Bureau of the Census was paid for in 1912 from appropriations for the Thirteenth Decennial Census.

d Of this amount \$5,011.48 covers printing done in connection with publishing statistics of cotton and tobacco, and the Department's allotment for printing and binding was reimbursed to that extent.

e Of this amount \$41,702.60 was expended by the Department up to May 5, 1913, and the balance (\$35,047.40) was transferred to the Department of Labor on May 9, 1913.

f Of this amount \$6,723.06 covers printing done for the Bureau of Navigation and the Bureau of the Census for which the Department's allotment was reimbursed.

DISTRIBUTION OF PRINTED SUPPLIES.

There were received and filled during the past year 8,823 requisitions from the various outside services of the Department calling for 8,330,606 blank forms, against 8,093,849 in 1912, and 298,044 books and pamphlets, compared with 315,203 in 1912. There were also received and filled during the year from offices and bureaus of the Department in Washington 360 and from the outside services 369 requisitions for printed stationery, a total of 729, compared with 720 in the preceding year. The 729 requisitions called for 4,270,000 envelopes, 2,039,000 letterheads, 3,146,000 memorandum sheets, 7,700 stenographers' notebooks, 5,200 blank books, 661,000 index and guide cards, 48,000 vertical folders, and 222,000 blank forms.

The filling of the requisitions for blank books, blank forms, and stationery required the making up and forwarding of 15,609 pack-

ages, boxes, and bags, weighing 317,520 pounds, or 159 tons, against 14,967, weighing 293,652 pounds, or 147 tons, in 1912. The writing and forwarding of 11,500 letters and invoices was also required.

PUBLICATION WORK.

During the fiscal year 1913 the Department issued 901 publications, compared with 887 in the fiscal year 1912, 26 of which, against 31 in 1912, were printed in two or more editions during the year, while 76, compared with 51 in the preceding year, were reprints, without change, of issues of earlier years. The publications issued in 1913 contained a total of 50,560 printed pages, compared with 54,702 in 1912, and there were issued of them for the Department a grand total of 7,522,155 copies, against 7,144,490 in the preceding year, an increase of 377,665 copies.

The publication work of each bureau of the Department for the past two fiscal years is summarized in the following table. The table does not, however, include any publications issued by the Bureau of the Census during the fiscal year 1912 or Thirteenth Census publications issued by that Bureau in 1913, owing to the fact that these publications were not paid for from the allotment to the Department. Publications issued by the Children's, Immigration, Naturalization, and Labor Statistics Bureaus after they became parts of the Department of Labor are also omitted from the figures for 1913.

Bureau.	Publications.		Pages.		Copies printed for Department.		Cost, 1913.
	1912	1913	1912	1913	1912	1913	
Office of the Secretary	36	50	1,706	2,560	213,350	92,850	\$7,393.37
Census Bureau ^a	30	.....	.....	2,247	.....	191,700	48,766.20
Children's Bureau ^b .....	.....	2	.....	87	.....	10,500	198.93
Coast and Geodetic Survey	35	25	4,958	2,070	67,650	31,500	16,450.74
Corporations Bureau	16	19	3,019	3,954	28,700	33,225	14,553.78
Fisheries Bureau	44	49	3,530	2,516	31,775	44,225	12,494.91
Foreign and Domestic Commerce Bureau ^c	440	428	15,387	16,343	5,789,565	6,264,435	135,270.79
Immigration and Naturalization Bureau	50	27	1,341	839	139,575	92,725	5,169.70
Labor Bureau	38	29	12,375	8,127	153,600	132,000	20,351.75
Lighthouse Bureau	105	105	3,023	3,147	238,375	256,695	22,087.51
Navigation Bureau	9	16	3,051	2,239	15,600	74,600	10,998.50
Standards Bureau	95	108	4,765	5,272	88,150	86,700	12,857.91
Steamboat-Inspection Service	19	13	1,547	1,159	378,150	211,000	6,511.71
Total	887	901	54,702	50,560	7,144,490	7,522,155	\$313,105.80

^a Publications of the Census Bureau paid for in 1912 from appropriations for the Thirteenth Decennial Census.

^b Children's Bureau issued no publications in 1912, not being in existence during that year.

^c Figures for 1912 are those of the Bureau of Manufactures and Bureau of Statistics jointly, these two Bureaus having been consolidated into the Bureau of Foreign and Domestic Commerce by the act of Aug. 23, 1912.

^d Figures relate to publications actually becoming available during the year for distribution, consequently they do not agree with similar figures in a preceding table giving the cost of work done by the Government Printing Office during the fiscal year. Frequently the cost of a publication is charged against allotments for two or more fiscal year.

DISTRIBUTION OF PUBLICATIONS.

The work of addressing, wrapping, mailing, or otherwise dispatching publications for public distribution was transferred from the executive departments to the Government Printing Office (Superintendent of Documents) by section 8 of the act approved August 23, 1912, making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year 1913. The act required also that all machines, equipment, and materials used in such work be turned over to the Public Printer before October 1, 1912. The Department complied with this requirement during the month of September, 1912, and a statement of the number of publications and a list of the machines, equipment, and materials transferred to the Superintendent of Documents, together with a statement of the employments dispensed with, were included in the annual report for last year.

This change in the method of dispatching publications has not relieved the Division of Publications of any of its duties except those in connection with addressing wrappers from such mailing lists as are supplied with stencils and the labor of wrapping the publications. The maintenance of mailing lists and the writing of franks for use in responding to individual requests for publications still devolve on the Division, and the correspondence and record keeping have increased rather than decreased.

It is open to question whether the present system is entirely satisfactory. Experience has not demonstrated that it is economical, nor can it be claimed that prompt and efficient attention to individual requests for particular publications is certain under conditions which now prevail, because of the time necessarily consumed in transmitting franks to the Office of the Superintendent of Documents and the extra handling required. Frequent though unavoidable congestion in the Office of the Superintendent of Documents must necessarily add to the resulting delay. Much extra correspondence and searching of records and files is caused by addressees making complaints of failure to receive publications requested, due in many cases to this delay. As these complaints are often transmitted through the bureaus, it may readily be seen that much extra work is caused to both the bureaus and the Division of Publications by the present method of distribution. When publications were sent direct from the Department, requests were acted on and publications placed in the mails as a rule not later than the day following the receipt by the Department of the requests. This is now rarely possible. Also by reason of the familiarity of the employees of the Division of Publications with the Department's publications there was much less liability of error in

sending the publications out. As a result, the present system is often the cause of embarrassment to the Department, especially in filling telephonic requests from Members of Congress, representatives from foreign Governments, and officials of the departments who desire copies of publications for immediate use. Under a strict construction of the law such requests can be filled only through the Government Printing Office, which is attended with more or less delay, while under the former system they could be complied with in a few minutes.

The Department is convinced that it would be wise to modify the law so far as it applies to the filling of individual requests for publications, and in such cases to allow the publications to be mailed direct from the Department. The printing bills (S. 825 and H. R. 6539) now pending in Congress will, if enacted into law, accomplish the reform desired.

The number of publications of the Department sent out on mailing lists and in response to miscellaneous requests during the fiscal year 1913 was 7,107,199, against 6,484,506 during the preceding year, an increase of 622,693, or 9.6 per cent. The following is a statement of the distribution by months:

July	574, 027	February	535, 435
August	623, 000	March	568, 999
September	584, 625	April	590, 911
October	627, 359	May	577, 376
November	552, 972	June	681, 087
December	584, 835		
January	606, 573	Total	7, 107, 199

TRANSFERS TO THE DEPARTMENT OF LABOR.

In compliance with the act approved May 1, 1913, making appropriations for certain expenses incident to the first session of the Sixty-third Congress, etc., the allotment to the Department for printing and binding for the fiscal year 1914 was prorated among its various offices, bureaus, and services, and \$84,000 of the sum allotted was transferred on June 30, 1913, to the Department of Labor. This sum was based on the following suballotments to the several offices, bureaus, and services transferred to that Department, together with \$875 for the office of the Secretary of Labor:

Bureau of Labor Statistics	\$32, 500
Bureau of Immigration	5, 100
Division of Information	2, 300
Immigration Service	18, 000
Bureau of Naturalization	1, 400
Naturalization Service and Naturalization Examiners	13, 925
Children's Bureau	9, 300
Total	83, 125

The suballotments to the bureaus, offices, and services now constituting the Department of Labor for 1913 totaled \$76,750, of which only \$72,375.24 was expended. The amount allotted to that Department for 1914 is therefore \$7,250, or more than 9 per cent, in excess of the amount allotted to it for 1913, and \$11,624.76, or more than 16 per cent, in excess of its actual expenditures in 1913, whereas the increase in the amount available for the Department of Commerce, over either allotment or expenditures (excepting, of course, the Bureau of the Census, which in 1914 for the first time is to use a considerable part of the allotment to the Department), is less than 4 per cent.

On May 15, 1913, there were transferred to the Department of Labor stocks on hand of 165 different publications, aggregating 107,710 copies, which had previously been issued by bureaus of that Department, and on May 6, 1913, there were transferred to it blank books and blank forms belonging to the Immigration Service, Naturalization Service (clerks of courts), and Naturalization Examiners Service embracing 215 different kinds, aggregating 1,156,372 copies.

SALE OF PUBLICATIONS.

Inquiries from time to time, especially by the Printing Investigation Commission, have brought to light extravagances in public printing and binding, not the least important of which is the waste in the present method of free distribution of public documents. This Department has devoted considerable thought to devising means by which such waste may be checked, and it has developed that there is only one way by which this can be done effectually, and that is by restricting gratuitous distribution, as is done by a number of foreign governments. The Department has made a few experiments in selling its publications, with uniformly satisfactory results. In one case an arrangement was entered into with the Superintendent of Documents to furnish a monthly publication of the Bureau of Foreign and Domestic Commerce to subscribers at the rate of \$1 per year, and this periodical has been distributed on such a basis since May, 1913.

In each of these cases the Department has had the helpful cooperation both of the bureaus affected and of the Superintendent of Documents, and the success which has attended experiments so far has convinced the Department that they should be extended gradually to many other publications now distributed gratuitously. This conviction is based upon two very important considerations—first, the plan tends to check waste and extravagance in public printing by restricting excessive demands from sources which frequently can not be benefited by the publications; and second, and equally important, public appreciation of the work of the Depart-

ment can not in any other way be so well gauged as by the willingness with which publications which it may issue are bought, as the Department thus has the public's estimate of the particular classes of publications which emanate from it, and consequently becomes familiar with the public's appreciation of lines of work which devolve upon it. Thus it is enabled to determine those lines to which it shall give greatest attention in developing its work.

Perhaps the Daily Consular and Trade Reports furnishes the best opportunity for the Department now to apply the subscription idea in selling its publications. The limit of 20,000 copies placed by law on the edition of these reports was reached two years ago, and although the current lists have been carefully culled there are hundreds of requests for them which can not be complied with unless Congress permits the printing of a larger edition. It has been necessary to refuse requests even from Members of Congress for copies intended for parties entitled to them. It is estimated that this publication could be supplied to subscribers for \$3.50, or even \$3, per year. If the recipient were required to pay such a nominal price for it, the limit on the edition would be removed, its distribution would be much more equitable than is possible under the present method, and the Department's printing and binding allotment would profit to the extent of about \$40,000 per annum.

The Superintendent of Documents has ample authority to sell public documents at a price based upon the estimated cost of printing from stereotyped plates. There appears no reason why the Department should not take greater advantage of the authority thus granted to relieve its allotment for printing and binding of some of the heavy charges against it, while the sale plan would permit a wider circulation of some publications than is now permitted by the limitation placed on editions by law.

OFFICE OF THE SOLICITOR.

During the fiscal year ended June 30, 1913, 298 contracts, totaling \$1,157,706, together with 68 contracts of indeterminate amount; 124 leases, amounting to \$201,983; 19 revocable licenses, amounting to \$5,327; insurance policies in the sum of \$200,000; and 1,285 bonds, amounting to \$1,690,637, were examined (approved, disapproved, drafted, redrafted, modified).

The number of legal opinions rendered, formal and informal (memorandum), totaled 336. Compensation claims handled, involving an examination as to law and facts, numbered 1,684.

In addition, 794 miscellaneous matters, embracing everything submitted for the advice or suggestion of the Solicitor, or for the formulation of departmental action, not included in the foregoing items, were handled.

BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

In the act making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year 1913, approved August 23, 1912, Congress established the Bureau of Foreign and Domestic Commerce by consolidating the former Bureaus of Manufactures and Statistics of this Department.

Except for the addition of certain functions related to the investigation of questions arising under tariff legislation, the duties and activities of the two former bureaus were carried on during the year with little material change. The funds which had formerly been appropriated for the collection of statistics of internal commerce were not provided this year, and this made it necessary to omit these records from the Monthly Summary of Commerce and Finance. Many protests have been made by business houses interested in these statistics, and it is urged that the Bureau be again provided with means to gather and publish them. With the growth of our commerce it becomes daily more necessary to have the current statistics of our trade properly recorded in Government publications, and the extension of this particular service should receive careful consideration.

PUBLICITY WORK.

In the active development of the promotive service of the Bureau through publicity there were issued during the year its periodical bulletins of trade information, which include the Daily Consular and Trade Reports; the semiweekly press letters of statistical information; the Monthly Summary of Commerce and Finance; the monthly Sailing Dates of Steamships; the several quarterly statistical statements, and the annual volumes entitled Commerce and Navigation of the United States, Statistical Abstract, and Commercial Relations of the United States. These publications were very widely distributed and the demand for all except the last named is constantly growing. The mailing list of the Daily Consular and Trade Reports has long since reached the limit of 20,000 copies fixed by the present law, and unfilled applications have accumulated for many months. No reason for restricting the issues of this journal, it is believed, should hold against the very practical value which it possesses in relation to the extension of the export trade of the country. As a current record of commercial conditions in foreign countries it is acknowledged to be indispensable to manufacturers and exporters. The information printed in these reports is collected at very great cost, and it is obviously unwise to restrict unnecessarily the useful distribution of these facts to the commercial interests.

Effort is made to enhance the promotive effect of the statistical bulletins of the Bureau by analyses given to the trade press at frequent intervals. There is a great opportunity for the development of this branch of the work of the Bureau, both through improvement of methods of collecting the statistics of our commerce and by intensive studies of the use made of the published tables. Many of these tables can no doubt in this way be made more practically helpful to business men.

A large number of special commercial reports and confidential circulars were also issued during the year, and these were widely distributed direct to those firms and individuals known to be most practically interested.

Monographs on the foreign markets for motor vehicles, canned goods, musical instruments, cotton goods, shoes and leather, and many other products were published. A specially important report on Foreign Credits and a Directory of Commercial Organizations in the United States were printed, and many copies of these bulletins were sold by the Superintendent of Documents.

DIVISION OF STATISTICS.

The work of this branch of the Bureau should receive much more attention and support than is now afforded it by Congress and commercial interests. In addition to the bulletins on imports and exports, some method of collecting and publishing facts and statistics concerning the current movements of domestic commerce should be promptly established and vigorously developed if we hope to have at our command the essential facts relating to our commercial growth.

DIVISION OF FOREIGN TARIFFS.

The Division of Foreign Tariffs was largely employed during the year in aiding the Ways and Means Committee of the House of Representatives by providing information in regard to tariff matters both at home and in foreign countries. This necessarily reduced materially the volume of its work of translating and publishing the tariffs of foreign countries.

A large quantity of tariff information was, however, distributed during the year by correspondence, through the pages of the Daily Consular and Trade Reports, and by special bulletins.

FIELD INVESTIGATIONS.

A study of the publications of the Bureau will indicate the service performed by its commercial agents during the past fiscal year. As has been the policy for a number of years, special subjects have been taken up in turn, and studies in the United States and foreign

countries have been made of the cotton-textile industry; of the trade in boots and shoes and leather, machinery and tools, drugs and proprietary medicines, canned goods, coke-oven by-products, and oil-seed products; of commercial organizations and commercial laws abroad; of trade association activities in the United States, and many similar matters.

I am convinced that this branch of the work of the Bureau should be very liberally supported by Congress. This country should be behind no other nation in the employment of expert commercial representatives, as specialists in technical commercial fields, in foreign lands. We can not expect to guard and increase our export commerce if we neglect to develop this important service, which is constantly becoming more essential in the struggle for export trade between the great competing manufacturing nations.

Pottery investigation.—The tariff legislation which occupied the attention of Congress during the year directed special attention to the Bureau as a source of useful information in regard to American manufacturing industries.

A request from the manufacturers of pottery in the United States for an intensive study of their industry resulted in a decision to make a careful survey of that subject, not as in direct relation to the pending tariff legislation but as a definite promotive contribution to the commercial history of the country. Such a study was begun in May and is now in progress. When completed it is hoped that the resultant report will be an authoritative and accurate picture of the conditions in the pottery industry, informing not only to the public and Congress but also even to those actively engaged in that industry. The work has already progressed far enough to make it seem certain that the results of the inquiry will be of great interest and of definite practical value.

The advantage of a nonpartisan and disinterested study of such a subject does not need to be pointed out at this time. Nothing is more certain than that public opinion is fixed as to the desirability of having official records of this character available, both for the promotion of commercial efficiency and for use when legislation affecting an industry is to be considered.

DEVELOPMENT AND EXPANSION OF THE BUREAU.

The matter of reorganizing the Bureau of Foreign and Domestic Commerce is of such far-reaching importance to the industry and labor of our land that it has been made the subject of special study. Our foreign commerce, to which in substance the work of the Bureau is, under present law, confined, has expanded during the past fiscal year at a rate in excess of \$1,000,000 per day.^a The relation of

this enormous trade to the prosperity of our people is so obvious as to need no comment.

The Bureau of Foreign and Domestic Commerce, which has this work in charge, has not received the financial support to which the dignity and necessity of its work entitles it. The Chief of that Bureau receives but \$4,000 per annum, while in the same Department the chiefs of other bureaus, no more closely related to our welfare, are paid one-half more. The total appropriation, including printing and contingent allotments, is less than \$364,000, which is trivial in comparison with the duties to be performed and the opportunities to be opened.

Being familiar, in a general way, with the operations of this Bureau before assuming office, I gave the subject of its reorganization careful thought for some weeks after it came under my charge as Secretary of Commerce. I then requested the Chief of the Bureau to prepare a written statement of what, in his judgment, should be done to develop the work under his care. When this was done and statements from other departmental sources on the same subject were prepared, I requested a committee of experienced officers in my own Office to go over these papers and to submit a plan for reorganization based upon the facts thus laid before them and on their own experience. This plan I have myself carefully revised, in consultation with the said committee, and it is presented below.

The proposed organization, consisting of five units, divides the work of the Bureau into four classes, namely, (1) promotion work under the immediate supervision of the Chief, (2) collection of information, (3) distribution of information, and (4) administration. This plan provides for a Chief and two Assistant Chiefs. One of the Assistant Chiefs should be placed in charge of investigations to be made under the law which transfers to the Bureau certain duties formerly under the present Bureau of Labor Statistics of the Department of Labor, and of a section dealing with tariffs and tariff relations; the other should be in charge of that part of the work which relates to the collection and compilation of statistics, the work performed by commercial attachés, commercial agents, and consuls, in so far as the work of the latter relates to the Department of Commerce.

Imports:		
1913	-----	\$1, 813, 008, 234
1912	-----	1, 653, 264, 934
Increase in imports, 1913 over 1912		----- \$159, 743, 300
Exports:		
1913	-----	2, 465, 884, 149
1912	-----	2, 204, 322, 409
Increase in exports, 1913 over 1912		----- 261, 561, 740
Increase in total trade, 1913 over 1912		----- 421, 305, 040
50884°—Ab. 1913—vol 2—31		

DIVISION OF THE WORK.

(1) *Promotion work.*—This work should be such as may be assigned to the Chief of the Bureau by the head of the Department in connection with commercial and trade organizations of all kinds, and such other trade-promotion work for which Congress may hereafter provide.

(2) *Collection of information.*—Under this head should be placed the work having to do with investigations made in connection with the duties transferred to the Bureau by recent law, tariff work, statistical work, and the work of commercial attachés, commercial agents, and consuls. This work should be organized under two Assistant Chiefs, one to be in charge of the investigation and tariff work referred to, the other to be in charge of the other classes of work under this group, viz, statistics, commercial attachés, commercial agents, and consuls.

(3) *Distribution of information.*—The work of distribution of information under the proposed plan should be placed in charge of a division to be called the division of commercial reports, the chief of which should come under the immediate supervision of the Chief of the Bureau. This division should have entire charge of the method of presentation of all information collected by the Bureau; the preparation of monographs on special subjects; the editing, revising, and issuing of publications, and the answering of all inquiries for information pertaining to the work of the Bureau.

(4) *Administration.*—The administration should be under a chief clerk, who should be charged with the detail of handling the general administrative affairs of the Bureau.

PERSONNEL AND DUTIES OF THE VARIOUS ORGANIZATION UNITS.

The duties of the Chief of the Bureau shall be such as are required by law and directed by the head of the Department, and which usually pertain to the administration of a Federal bureau. It shall be his duty to foster and promote American commerce and trade, and to make known the duties and operations of the Bureau of Foreign and Domestic Commerce, along the line of trade promotion, by personal conferences with trade organizations, and trade bodies organized for the purpose of promoting the commerce of the United States both at home and abroad. He is, under the suggested arrangement, provided with a private secretary and 2 clerks, making a total personnel of 4 for his immediate office.

The Assistant Chief in charge of investigations and of the section dealing with tariffs and tariff relations should be a lawyer, versed in economics and statistics. He should have in his immediate office 3 clerks, making a total personnel of 4. Congress has been asked for a lump-sum appropriation of \$100,000 for the fiscal year ending June 30, 1915, for the employment of experts and field agents for the pur-

pose of making the investigations required under the act of August 23, 1912. An appropriation of \$50,000 for this purpose was made in the urgent deficiency bill approved October 22, 1913, for the fiscal year ending June 30, 1914.

The tariff section should be provided with a chief and a clerical force of 8 assistants, ranging in salaries from \$1,000 to \$2,000, making a total personnel for this section of 9.

The other Assistant Chief provided in the organization plan, to be in charge of the statistical division, the force of commercial attachés, commercial agents, and work of the consuls pertaining to the Department of Commerce, should have in his immediate office 3 clerks, making a personnel of 4. He should have under him a chief statistician to be directly in charge of the statistical work of the Bureau. The duties of this division should pertain entirely to the tabulation and compilation of statistics pertaining to our foreign trade. These statistics are furnished the Bureau on specially prepared forms. The duties of the division should be merely those of tabulation and compilation without any duties involving the publication or presentation of facts.

The statistical division should be provided with 44 clerks, with salaries ranging from \$900 to \$2,000 per annum. It is my opinion that the present divisions in the Bureau dealing with statistics, viz, compilation and revision, should be consolidated into one division, thus making the entire personnel of this enlarged statistical division interchangeable for all purposes of compilation and final checking of figures. It is believed that the force thus provided for this division will be ample to take care of the work until such time as import and export statistics are considerably enlarged. It may also care for statistics of domestic trade when this work is authorized.

I am informed that there are about two and one-half times as many employees now engaged upon similar work in Canada as in the United States, and that the volume of foreign trade in the United States is nearly five times greater than that of Canada; but I believe that with a proper reorganization of the statistical division of the Bureau satisfactory results may be obtained, for the present, with the personnel recommended.

The division of commercial reports should be charged with the duty of distributing all information collected and collated by the Bureau. The chief of this division should come immediately under the Chief of the Bureau. All materials collected, collated, and compiled in the various divisions of the Bureau should be forwarded to this division, which, under the supervision of the Chief of the Bureau, should devise the method of presenting the information to the public. The division should determine, subject to the direction of the Chief of the Bureau, whether certain information should be published, the form in which it should be published, etc. In this

division should be prepared such monographs on particular topics as it is decided to issue, all replies to inquiries for information on the Bureau, whether made by Congress, the departments, or private individuals, the editing, revising, and proof reading of all publications, and the preparation of matter for the press. It should be supplied with a force of 21 employees, whose salaries should range from \$900 to \$2,500 per annum, making a total personnel of 22 for this division.

The chief clerk should have supervision over the administration of the clerical force of the Bureau and its distribution. He should be in charge of the property and quarters of the Bureau, records relating to leave of absence, accounting, bookkeeping, etc. He should be provided with 3 clerks, 3 assistant messengers, and 2 laborers, making a total personnel of 9.

The following table shows the proposed organization by organization units, together with the salaries for each position:

Position.	Salary.	Position.	Salary.
Chief of Bureau.....	\$7,500	Chief of Bureau—Continued.	
Private secretary.....	1,800	2. Assistant Chief—Continued.	
1 clerk, class 3.....	1,600	a. Chief statistician—Continued.	
1 clerk, class 2.....	1,400	10 clerks, at \$1,000 each..	\$10,000
a. Promotion (lump-sum ap- propriation, \$100,000).		10 clerks, at \$900 each....	9,000
1. Assistant Chief.....	4,000	(Total for division, 45 employees.)	
Confidential clerk.....	1,600	b. (Commercial attachés, \$150,000 appropriation.)	
2 clerks, class 1.....	2,400	c. (Commercial agents, \$100,000 appropriation.)	
(Lump-sum appropria- tion, \$100,000.)		d. Consuls (for commercial re- ports).	
Chief of division of tariff and tariff relations.....	3,000	3. Chief of division of commercial reports.....	3,000
1 translator.....	2,000	Assistant chief.....	2,500
1 clerk, class 4.....	1,800	2 clerks, class 4.....	3,600
2 tariff assistants, at \$1,400 each.....	2,800	2 clerks, class 3.....	3,200
1 clerk, translator.....	1,400	3 clerks, class 2.....	4,200
1 clerk, stenographer and typewriter.....	1,400	4 clerks, class 1.....	4,800
1 clerk, translator.....	1,200	4 clerks, \$1,000 each.....	4,000
1 clerk.....	1,000	5 clerks, \$900 each.....	4,500
(Total for division, 9 employees.)		(Total for division, 22 employees.)	
2. Assistant Chief.....	4,000	4. Chief clerk.....	2,250
Confidential clerk.....	1,600	1 clerk, class 4.....	1,800
2 clerks, class 4.....	3,600	2 clerks, class 2.....	2,800
a. Chief statistician.....	3,000	3 assistant messengers, \$720 each.....	2,160
1 clerk.....	1,600	2 laborers, \$660 each.....	1,320
Chief of division.....	2,000	(Total for office, 9 em- ployees.)	
5 clerks, class 4.....	9,000		
5 clerks, class 3.....	8,000		
5 clerks, class 2.....	7,000		
7 clerks, class 1.....	8,400	Total.....	142,130

The following table shows, in parallel columns, the proposed and present organization of the Bureau:

Proposed organization.				Present organization.			
Position.	No.	Salary.	Total.	Position.	No.	Salary.	Total.
Chief of Bureau.....	1	.....	\$7,500	Chief of Bureau.....	1	.....	\$4,000
Assistant Chiefs.....	2	\$4,000	8,000	Assistant Chief.....	1	.....	3,000
				Assistant Chief.....	1	.....	2,750
Chief statistician.....	1	.....	3,000				
Chiefs of division.....	2	3,000	6,000	Chief of division.....	1	.....	2,500
Chief of division.....	1	.....	2,000	Chief of division.....	1	.....	^a 2,500
Assistant chief of division.....	1	.....	2,500	Assistant chief of division.....	1	.....	^a 2,000
Chief clerk.....	1	.....	2,250	Chief clerk.....	1	.....	2,250
Translator.....	1	.....	2,000				
Private secretary.....	1	.....	1,800	Stenographer to Chief of Bureau.....	1	.....	1,600
Confidential clerks.....	2	1,600	3,200				
Clerks of class 4.....	11	1,800	19,800	Clerks of class 4.....	7	\$1,800	12,600
Clerks of class 3.....	8	1,600	12,800	Clerks of class 3.....	5	1,600	8,000
Clerk.....	1	.....	1,500	Clerk.....	1	.....	1,500
Clerks of class 2.....	15	1,400	21,000	Clerks of class 2.....	11	1,400	15,400
				Tariff assistant.....	1	.....	^a 1,440
				Translator.....	1	.....	^a 1,400
				Clerk.....	1	.....	^a 1,400
Clerks of class 1.....	14	1,200	16,800	Clerks of class 1.....	14	1,200	16,800
				Translator.....	1	.....	^a 1,200
Clerks.....	15	1,000	15,000	Clerks.....	17	1,000	17,000
Clerks.....	15	900	13,500	Clerks.....	11	900	9,900
				Messenger.....	1	.....	840
Assistant messengers.....	3	720	2,160	Assistant messengers.....	5	720	3,600
Laborers.....	2	660	1,320	Laborers.....	4	660	2,640
				Laborer.....	1	.....	480
Total.....	97	.....	142,130	Total.....	89	.....	114,800

^a The salaries for these positions are paid from the appropriation for collating tariffs of foreign countries.

The comparative table shows an increase in salaries of \$27,330, with an increase of only 8 in the number of positions provided for.

SUGGESTED LEGISLATION FOR NEW WORK.

Commercial attachés.—It is believed that Congress should authorize the employment by the Department of 14 commercial attachés, to be resident in various foreign countries, these attachés to be each supplied with a clerk whose compensation should be \$1,500 per annum. The attachés should be divided into three groups as regards salaries, viz, 3 at \$5,000 per annum, 4 at \$4,500 per annum, and 7 at \$4,000 per annum. The countries to which these attachés should be accredited, and their headquarters, are given in the table on the following page, which also gives the total area of the countries represented, population, and total trade with the United States in 1912.

The attachés should be men of demonstrated commercial ability and experience, speaking the language of the country to which they are accredited or a language current in commercial circles therein. Preference would be given officers of the Consular Service and the Department of Commerce or other branches of the executive service who have unblemished records and who have shown marked ability in commercial promotion.

SUGGESTED ORGANIZATION OF A CORPS OF COMMERCIAL ATTACHÉS SHOWING TERRITORY TO BE COVERED BY EACH ATTACHÉ, SALARY, HEADQUARTERS, AREA, POPULATION, AND TRADE WITH THE UNITED STATES IN THE FISCAL YEAR 1913.

District.	Salary.	Headquarters.	Area.	Population.	Imports into United States.	Exports from United States.
			<i>Sq. miles.</i>	<i>Number.</i>		
United Kingdom.....	\$5,000	London.....	121,316	45,366,000	\$295,564,940	\$597,149,059
Germany, Denmark, and Switzerland (possibly Scandinavia). ^a	5,000	Berlin.....	538,929	79,650,000	234,790,099	371,694,379
France, Belgium, and Netherlands.	5,000	Paris.....	231,673	53,114,000	216,999,971	338,855,525
Austria-Hungary, Greece, Balkan States (possibly Turkey). ^b	4,500	Vienna.....	500,224	76,770,000	33,773,531	29,282,920
Argentina, Paraguay, and Uruguay.	4,500	Buenos Aires....	1,309,090	9,150,000	29,372,714	60,604,846
Japan and Chosen ^c ...	4,500	Tokyo.....	245,641	68,997,000	91,638,373	59,112,741
China ^d	4,500	Peking.....	4,277,170	336,042,000	39,010,800	21,326,834
Peru, Bolivia, and Ecuador.	4,000	Lima.....	1,510,143	8,378,000	12,704,618	10,836,432
Russia ^e	4,000	St. Petersburg..	8,361,708	166,108,000	29,315,217	26,465,214
Brazil.....	4,000	Rio de Janeiro..	3,291,416	21,115,000	120,155,855	42,638,467
Chile.....	4,000	Santiago.....	292,420	3,415,000	27,655,420	16,076,763
Italy and Mediterranean countries. ^f	4,000	Rome.....	1,744,000	92,369,000	109,689,965	111,642,983
British South and Central Africa. ^g	4,000	Johannesburg...	2,233,478	35,981,000	4,334,339	18,852,009
Australia, New Zealand, South Pacific Islands. ^h	4,000	Melbourne.....	3,079,332	5,665,000	15,341,362	52,431,352

^a Includes Germany, Switzerland, Denmark, Norway, and Sweden.

^b Includes Austria-Hungary, Roumania, Bulgaria, Servia, Montenegro, European Turkey, and Greece.

^c Does not include, as regards area and population, Sakhalin, but for commerce the figures include the southern part of that island. Formosa is included throughout.

^d Does not include leased territory.

^e European and Asiatic.

^f Includes Italy, Spain, Gibraltar, Malta and Gozo, Asiatic Turkey, Egypt, Tripoli, and Morocco.

^g Includes all British Africa. Central Africa not separately stated.

^h Includes only Australia and New Zealand. Area and population of the Southern Pacific islands can not be separately stated. United States commerce with German, French, and British Oceania, exclusive of Australia and New Zealand: Imports, \$1,191,831; exports, \$1,286,700.

The commercial attachés provided for in the organization plan should be officers of the Department of Commerce, who should, however, through the State Department, be accredited to the various foreign embassies and missions in the same manner as naval and military attachés are now accredited. They should establish headquarters where they will always be represented by a clerk, provided in the plan of organization. Their duties should be to collect information which will prove of value to American manufacturers and business concerns. It is suggested that commercial attachés receive appointments of comparatively long terms, as their value to the Government will depend entirely upon their knowledge, through experience, of local conditions in the countries to which they are accredited. They should be excepted from the requirements of competitive civil-service examinations and should be appointed by the Secretary of Commerce. The law should be so framed that the head of the Department of Commerce, through the bureau, can correspond directly with the commercial attachés, and not be required to use any agencies of the State Department for that purpose.

For this work I have recommended that Congress appropriate a lump sum of \$150,000 for 1915. Of this appropriation, under the above plan, \$82,000 would be for salaries of the commercial attachés and their clerks, while \$68,000 would cover traveling and subsistence expenses, rent of quarters, and all other miscellaneous items in connection with their work, including their transportation from Washington to their stations and return. A draft of the suggested appropriation to cover these items is given below:

COMMERCIAL ATTACHÉS: For commercial attachés to be appointed by the Secretary of Commerce without examination under the civil-service rules, and to be accredited through the State Department, whose duties shall be to investigate and report upon such conditions in the manufacturing industries and trade of foreign countries as may be of interest to the United States, as follows: 3 at \$5,000 each; 4 at \$4,500 each; and 7 at \$4,000 each; and for 1 clerk to each of said commercial attachés to be paid a salary not to exceed \$1,500 each, and for necessary traveling and subsistence expenses, rent, purchase of reports, travel to and from the United States, and all other necessary expenses not included in the foregoing, \$150,000: *Provided*, That the commercial attachés shall serve directly under the Secretary of Commerce and shall report directly to him.

Commercial agents.—The force of commercial agents should also come under the immediate direction of an Assistant Chief, whose duties relative to this force should consist largely of advising them as to the class and kind of information that is desired (supervision of the field work), leaving the entire work incident to methods of presentation and issuing of reports to the division of commercial reports. For the commercial agents it is recommended that an

appropriation of \$100,000 be made, to be worded as given in the following form:

To further promote and develop the foreign and domestic commerce of the United States, to be expended under the direction of the Secretary of Commerce, \$100,000: *Provided*, That the consular officers of the State Department shall report directly to the Secretary of Commerce with reference to commercial matters: *Provided, also*, That not exceeding \$3,000 out of the sum hereby appropriated may be expended for the purchase of documents, manuscripts, plans, specifications, and other publications necessary for the promotion of our commercial interests.

Consuls.—The duty of the Assistant Chief in relation to consuls should be that of preparing all calls for commercial information upon a given subject, the direction of the class of general information to be supplied, leaving all questions of methods of presentation, editing, and elimination to the division of commercial reports. It is recommended that the gathering of purely commercial information and the furnishing of commercial data by consuls be under the general supervision of the Secretary of Commerce, while retaining the appointment and control of the consuls under the Department of State, as at present, and appropriate legislation to effect that purpose is recommended in the estimate of appropriations for commercial agents for this Department.

The direct transmission by consular officers of reports relative to the work they, under the law, are required to perform for the Department of Commerce seems to be a more businesslike and efficient procedure than the practice under current law.

Developing trade in Central and South America.—It is believed that the Bureau should be provided with a special lump-sum appropriation of \$100,000 with which to develop the trade of the United States with Central and South America.

The completion of the Panama Canal will greatly facilitate communication between the United States and the vast territory comprising Central and South America, and a special effort should be made by this country to develop its full share of this trade. The following form is suggested for the appropriation:

To further promote and develop the commerce of the United States with South and Central America, including the employment of experts and special agents in Washington, D. C., and elsewhere, purchase of books of reference, reports, traveling and subsistence expenses of officers and employees, and all other necessary incidental expenses not included in the foregoing, to be expended under the direction of the Secretary of Commerce, \$100,000.

Investigation of costs of production.—In the estimates for the fiscal year 1915 an estimate for an appropriation of \$100,000 is made to enable the Department to execute the provisions of law directing investigations into costs of production and other economic conditions

affecting manufacture and trade. Using the language of the law as now on the statute books for a basis, the appropriation should be in the following form:

For salaries and all other actual necessary expenses, including field investigations at home and abroad, compensation of experts and special agents, to be employed in Washington, D. C., or in the field, without examination under the civil-service rules, rental of quarters in Washington, D. C., and elsewhere, purchase of books of reference and manuscripts, to enable the Bureau of Foreign and Domestic Commerce of the Department of Commerce to ascertain at as early a date as possible, and whenever industrial changes shall make it essential, the cost of producing articles at the time dutiable in the United States, in leading countries where such articles are produced, by fully specified units of production, and under a classification showing the different elements of cost, or approximate cost, of such articles of production, including the wages paid in such industries per day, week, month, or year, or by the piece; and hours employed per day; and the profits of manufacturers and producers of such articles; and the comparative cost of living, and the kind of living; what articles are controlled by trusts or other combinations of capital, business operations, or labor, and what effect said trusts or other combinations of capital, business operations, or labor have on production and prices, \$100,000.

This appropriation will provide a corps of experts and special agents who will make the investigations and reports required.

The following table shows the estimated appropriations which will be required if the recommendations in this report are enacted into law, compared with the appropriations for the Bureau for the present fiscal year, under current law:

Items.	Appropriation suggested for the organized Bureau.	Appropriation for 1914 under current law.
Salaries for Bureau.....	\$142,130	\$104,860
Promoting commerce (commercial agents).....	100,000	60,000
Collating tariffs.....		10,000
		174,860
Investigation work under law transferred from Bureau of Labor Statistics.....	100,000	50,000
Commercial attachés.....	150,000	
Promotion work in Central and South America.....	100,000	
	592,130	224,860
Printing and binding (suballotment from Department allotment).....	160,000	135,000
Contingent expenses (allotment from Department appropriation).....	7,500	3,500
Total.....	759,630	363,360

The sum of approximately \$760,000, suggested as necessary for the proper work of this Bureau, is less than two-hundredths of 1 per cent of the commerce passing under the review of this Bureau during the last year.

Possibly I may have erred in not asking a more adequate provision for this great work. Certainly it is not consistent with our national self-respect to ask for less. It should be noted, finally, that now is the appointed time. We have spent several hundred millions preparing the Panama Canal and the nations of the world have been getting ready for its use while we have done almost nothing actively to promote the commerce which should repay the nation, in part at least, for this vast outlay.

BUREAU OF CORPORATIONS.

SCOPE OF PAST WORK.

Heretofore specific industries, such as beef, oil, tobacco, lumber, steel, water transportation, water power, harvester, and cotton exchanges, have been the subject of investigation by the Bureau of Corporations. They have been isolated, intensive investigations, each conducted without reference to the plan of the other, except as general conditions demanded. Their value has been immediate and local in the sense that they have each been confined to one specific subject.

STATUS OF PENDING INVESTIGATIONS.

Of these old investigations those on lumber, tobacco, water transportation, the harvester industry, and corporate taxation remain to be concluded by the publication of additional reports, but all of them will probably be closed up within the next 12 months. In addition to these are the new investigations now pending pursuant to Senate resolutions, to wit, investigations of the fertilizer industry, the relationship of the Oklahoma oil fields to the general oil market, and the cotton pool. The two former are broad subjects, and will require considerable time for their investigation and report thereon.

The following additional investigations are being pursued at the present time:

Administrative commissions.—A comparative analysis of the laws of foreign countries and of the various States creating administrative commissions is now under way. A comprehensive understanding of what other governments have done, what weaknesses have developed, and what attributes are essential in the formation of administrative commissions will undoubtedly be of assistance in future legislation.

Conflict of State laws relating to foreign corporations.—Each Commonwealth of the Union has its distinctive laws with reference to corporations foreign to its jurisdiction. This has resulted in a wide divergence in the prerequisites for doing business in the various States with respect to interstate corporations. The penalties imposed for technical failure to comply with such prerequisites are

in many instances drastic and severe. This condition has often seriously hampered and restricted the business world. It has necessitated the retention by practically every large concern engaged in interstate commerce of an attorney who devotes himself to a study of the laws of the various States, so as to preserve the rights of lien and other contract rights of the particular corporation in its interstate activities. The amount of money actually lost by corporations due to unknowing violations of the laws of different States is undoubtedly very large. The Bureau proposes, therefore, to make an exhaustive study of the laws of the various States on this subject and to prepare a model system of regulation of foreign corporations, with a view to cooperating with State legislative committees in the modification of their laws. It is believed that if, as a result of this investigation, the Department is able to advise corporations doing an interstate business that at least in a number of States (naming them) a uniform system of regulation of foreign corporations has been established, a great and constructive piece of work will have been done for the benefit not only of the business world but of the respective communities as well.

Trade agreements.—An investigation of trade agreements is also in progress, with a view to establishing some facts as to what agreements, if any, apparently in restraint of trade, are really in aid of competition and should be exempted from the operation of the Sherman Act.

Fixed price for resale of articles.—There is also the investigation now pending with reference to the merits and demerits of a condition which prohibits a uniform price from being fixed by manufacturers and jobbers, binding upon retailers, as to articles of their manufacture.

Foreign laws on trusts, cartels, etc.—A comparative study and analysis of the laws of foreign countries with reference to the regulation by government of trusts, monopolies, cartels, etc., is now being made. Such a study of the laws of England, Germany, France, Canada, Australia, and New Zealand, and an authoritative statement of what they are, should prove of value.

FUTURE WORK.

The organic law of the Bureau provides:

The said Commissioner shall have power and authority to make, under the direction and control of the Secretary of Commerce, * * * diligent investigation into the organization, conduct, and management of the business of any corporation, joint stock company or corporate combination engaged in commerce among the several States and with foreign nations excepting common carriers * * * and to gather such information and data as will enable the President of the United States to make recommendations to Congress for legislation for the regulation of such commerce.

In order to accomplish the said purposes, the Commissioner is given power to procure testimony and facts by subpoena, including the power to compel the production of books, papers, etc. It is therefore within the power of the Bureau of Corporations—indeed, it might be stated that it is the duty of the Bureau of Corporations—to gather information of a broader and more comprehensive character with reference to industrial conditions pertaining to interstate commerce, so far as they have to do with corporations, than would be entailed in the investigation of isolated industries.

To be sure, the character and nature of the work of the Bureau of Corporations will be dependent upon the outcome of congressional action at the ensuing session of Congress, which will doubtless legislate with reference to the trust problem; and practically all of the bills submitted regarding this matter contain some reference to certain activities to which the Bureau may address itself, either as a part of the action of a commission or independent thereof.

There are two matters which ought to be handled by some governmental agency—the one is immediate and administrative; the other is fundamental and economic—and it lies within the power of the Bureau of Corporations to do this work under the present status of the law.

(1) *Reports of corporations.*—There are constant demands upon the Bureau for information with reference to certain particular corporations, which should be a matter of public information, but which it is unable to give at the present time. Some governmental agency should be clothed with the power and the duty to obtain and preserve as a public record facts with reference to interstate corporations, especially with respect to the larger companies. Where size limitations have been fixed, a gross business of \$5,000,000 has been generally accepted as the minimum standard in practically all bills introduced and pending in Congress, but certain facts should be required from smaller concerns in order to determine, among other things, the degree of control which large corporations possess in any particular branch of industry. These facts could be obtained by schedules to be prepared by the Bureau and submitted to corporations to be filled out and returned. The information sought might include copies of charters and by-laws; names of directors and officers; kinds and amounts of capital stock, bonds, and other similar obligations; statements of assets and liabilities and of profit and loss, or income; dividends, both cash and stock; the names of other corporations in which it holds stock, and names of other corporations which hold its stock, and the respective amounts held; other companies in which its officers or directors are either officers or directors, and their stockholdings in such other companies; agreements made with other corporations engaged in a similar or related business with respect to control of mar-

kets or territory, price fixing, etc. Such returns should be made annually, and in connection with the first annual return additional information regarding the original organization and capitalization of the corporation would probably be desirable, together with the stock or other consideration paid to promoters or underwriters. The careful analysis and coordination of this mass of information would shed a degree of light upon conditions that would be of great value to the President and to the country in considering the problem of control. This work would probably require a force equal to the present force of the Bureau.

(2) *Fundamental and economic question: The efficiency of trusts.*—That there are immediate and well-known conditions that should and can be remedied by law is apparent. Some of these remedies are, for instance, a law providing that there shall be a presumption that all restraints of trade are unreasonable, and placing the burden of establishing the reasonableness of such restraint upon the party alleging it; legislation looking to fundamental charter provisions for every corporation doing interstate business, that stocks and bonds shall not be issued except for money or property at its true money value, preventing the watering of stocks; that corporations shall not hold stock in other competing companies, and that neither a person nor a corporation shall at the same time own a controlling interest in two or more competing corporations, or that the officers of corporations shall not be affiliated directly or indirectly by holding office in other corporations.

Congress will undoubtedly address itself to some of these aspects of the situation with curative provisions. Regardless of such legislation, however, there still remains a fundamental economic fact to be determined, to wit, whether the trust or monopolistic form is socially and economically efficient in production, as is alleged; and upon the solution of this problem must depend the ultimate attitude of government toward combinations and consolidations in business. It is contended by some that with the increase in the size of industrial enterprises there goes a reduction in the cost of extraction, manufacture, and distribution, and that such reduction in cost is accompanied by lower prices to the consumer and does not involve a reduction in wages or an impairment of the conditions of labor. Even if these conditions were true, the question would still remain, of course, whether the evil resulting from large combinations would not be greater than the alleged advantages of cheaper production. It is contended, on the other hand, that the source and origin of monopoly is found chiefly in the desire to exploit the general public by stock-jobbing schemes for the immediate profit of the promoters or in the purpose to attain control of the market and exact unduly high prices from the consumer. Many large combinations have failed and dem-

onstrated their economic inefficiency. Combinations which have attained control of the market, it is admitted, have prospered, but this may be due to monopolistic position rather than to superior efficiency. According to this view, there is a point beyond which increase in size does not result in increase in efficiency, but rather in loss and waste, so that the maximum efficiency is not attained by large combinations, but by concerns of moderate size. If the latter contention be true, then, as has been said, the monopolistic system contains in itself the seeds of its own decay, and the proper attitude of government must be regulation of competitive conditions and not regulation of monopolistic factors.

No governmental agency is engaged in the attempt to secure facts in a scientific manner directed to this problem. The problem perhaps can not be solved dogmatically; but a careful, painstaking investigation would undoubtedly bring a great volume of facts, an analysis and study of which could not but throw great light upon the question.

Here, then, are two functions which the Bureau of Corporations could perform, conditioned, of course, upon its being furnished with the necessary appropriation.

In connection with this matter, permit me to call your attention to a practice which has grown up whereunder certain matters are referred by congressional resolution to the Bureau of Corporations for investigation. By this avenue there have come to the Bureau in the past investigations which in themselves would consume the Bureau's entire appropriation. These investigations are all of immediate importance, but for the greater part are of local rather than general interest. The Bureau of Corporations is desirous of performing this very useful function, and is splendidly equipped so to do; but to pursue investigations of this character would necessarily absorb the entire resources at its command, with the result that a constructive policy along a definite line would be impossible. It is therefore strongly urged that resolutions of this kind directed to the Bureau of Corporations contain appropriations for such investigations.

BUREAU OF STANDARDS.

The past fiscal year has been the most active one in the Bureau's history. In addition to its regular activities in testing and research, several new lines have been developed, the new electrical building has been completed, additional land has been purchased, numerous technical conferences have been held, and a sharp increase has occurred in the demands for the Bureau's cooperation in connection with public-utilities regulation. In spite of the technical character of the Bureau's work, its direct and intimate relation to the interests of the general public have given it opportunities for usefulness of un-

usual promise. Notable among its lines of work have been the success in its movement for honest weights and measures in daily trade, its cooperation in the more precise application of temperature control in the industries, its completion of fundamental work on electrical standards, the development of optical work, particularly with regard to photometric and color standards, and progress made toward establishing standards of quality for materials, and standards of regulation affecting public utilities. As a testing laboratory for the Government service, the Bureau has given assistance to various departments and independent establishments in the purchase of supplies by specification and test.

The appropriations for the year provided for the purchase of about 8 acres of land adjoining the present site, for the completion of the new electrical laboratory, for the completion of the large tension-compression testing machine, and for several special investigations, including the determination of refrigeration constants, the investigation of the effects of electric currents, and work on structural materials.

The testing of standards, weights, and measures, measuring instruments, and materials has been continued along with the research work in the various divisions and included 63,365 distinct tests. In addition, about 25,000 spring scales were critically examined at the factories for the parcel-post service, about 16,000 samples of cement were tested for the Isthmian Canal Commission and others, and about a million and a quarter incandescent electric lamps furnished on Government contracts were inspected. Approximately one-fourth of the laboratory tests made at the Bureau were for the public. These comprised standards and measuring instruments for heat, light, electricity, length, mass, capacity, pressure, and others. Since the testing of materials is not done for the public except under certain conditions, the Bureau's work on materials is the development of standards of quality and methods of testing, and in this manner it renders important service to industrial testing laboratories.

However important the testing—and its importance is being increasingly recognized—the Bureau's investigations into technical problems of standards, methods of measurement, tolerances, measuring instruments, legislation and regulation, and the standards of quality of materials must be recognized as of the utmost importance. The Bureau is not only called upon by all departments of the Government but by public-service commissions of cities and States, by State and municipal governments, manufacturers, and public-utilities companies, for experimental and other research for which the Bureau is peculiarly well fitted and for data which is in many cases at hand. The work of the Bureau of Standards in aiding the States and cities in formulating the scientific and technical details of legislation has

been particularly appreciated and its services have been in constant demand for this purpose. In this work the Bureau serves in a purely advisory and cooperative capacity, but it is believed that its work has been none the less effective, since its decisions have been arrived at through unbiased laboratory and field investigations by competent specialists.

WORK FOR MUNICIPALITIES AND STATES.

One of the most widely felt needs among the States and municipalities was for a uniform weights and measures law. Such a model law was prepared through the efforts of the Bureau and has been approved by the sixth weights and measures conference at the Bureau and is under consideration in numerous States. While ideal uniformity is not to be expected, the results are gratifying. Among the States which have requested and received the aid of the Bureau in this respect are California, Illinois, Indiana, Iowa, Kansas, Michigan, New Hampshire, Pennsylvania, and Texas. As far as local conditions permitted the provisions of the model law were adopted.

Another example of cooperation in the technical details of legislation is furnished by the model laws and regulations prepared by the Bureau on the subject of illuminating gas. These were the outcome of comprehensive investigations in the laboratory and in the field on the standardization of the manufacture, distribution, and use of gas, and embody the results of the best experience. In this work the Bureau has had the valuable cooperation of gas experts in all parts of the country. The Bureau's model regulations now form the basis of advanced legislation upon the subject of illuminating gas. These standard regulations have been published by the Bureau and will be revised from time to time as technical progress requires. Among the subjects studied were measurements of purity, heating value, candlepower, and the pressure of the gas—all important factors in an efficient gas service. This is a type of work which must be done in connection with all kinds of public utilities, the regulation of which is rapidly passing from legislative bodies to public-service commissions.

An investigation of great interest to cities is the recently completed study of the effects of electric currents upon underground structures such as gas and water pipes, reenforced concrete foundations of buildings and bridges, and other underground structures. In such cities as St. Louis, Chicago, and Philadelphia the electrolysis problem is a serious one. The Bureau's work, which will soon be published, resulted in a model survey which may be applied to cities and in a compilation of the means by which the effects of such currents may be minimized or entirely avoided.

Other examples of the technical service rendered cities might be cited, such as the investigation of the photometry of street lamps for

the cities of Washington and Philadelphia, which proved of particular service to these cities and resulted in greatly improved service.

With the rapid increase in the number of State and municipal public-service commissions, the variety of technical problems which arise in connection with the regulation of public utilities will increase accordingly. The Bureau has demands for its cooperation in an advisory capacity and much technical work has been done for these commissions. The importance of such work and the high class of experts required necessitate a special provision for it.

WEIGHTS AND MEASURES OF COMMERCE AND TRADE.

Among the important events of the year has been the Eighth Annual Conference on Weights and Measures, held at the Bureau of Standards in May. Twenty-five States, twenty-nine cities, a number of railroad scale inspectors, and manufacturers of weighing and measuring apparatus were in attendance. Through these conferences the Bureau exerts a far-reaching influence toward uniformity of practice and regulation in the local inspection service in the States and cities, with the most favorable effect upon the weights and measures of daily trade.

In cooperation with local inspection service of States and cities, the Bureau will supplement the local facilities by taking up the testing of large scales, such as warehouse and railroad scales, for which the equipment of local sealers is inadequate. This work is particularly imperative in the testing of the large scales used in the interstate shipments of commodities where both Federal and State governments will cooperate. The Bureau has contracted for a test car, the construction and equipment of which is a distinct improvement in type and will mark an important step forward in such work. The railroad, elevator, and other scales used in weighing commodities for interstate shipment will, it is hoped, be placed on a basis where both shippers and railroads may have confidence in freight weighings involving approximately \$2,200,000,000 annually.

The data from this investigation of large scales will facilitate the design and construction by manufacturers of such scales as will embody the best engineering features in accord with the carefully worked out theory of the operation of such apparatus. Several technical papers upon the theory and design of scales were prepared for the eighth annual conference. A study of the entire situation has brought out forcibly the defects in construction, testing, and maintenance of such scales. In this connection may be mentioned the assistance to the Post Office Department in establishing the parcel-post service scales upon an efficient basis. The Bureau aided in preparing the specifications and tolerances, and examined critically the many

models submitted to obtain the best scale for the purpose of quick and accurate weighings. The Bureau tested and inspected many thousands of the scales at the factories. The results of these tests proved the necessity of the most careful inspection of measuring and weighing apparatus, even when submitted on carefully drawn specifications. Many thousands of seriously faulty scales were rejected.

ESTABLISHMENT OF STANDARDS.

The Bureau is cooperating with the national standardizing laboratories of England, Germany, and France, with a view to international agreement on the standard temperature scales used by the several institutions, and there is excellent prospect for satisfactory agreement. Much information was furnished to a number of laboratories, both industrial and in the Government departments, on specifications for high-grade mercurial thermometers and on complete temperature equipments for scientific work requiring the highest accuracy. By this work the Bureau is establishing throughout the country the standard scale of temperature, an essential factor in all industries involving temperature measurements.

Standards of color are urgently needed for grading commodities, since many articles are purchased upon color specifications. For example, cottonseed oil is commercially graded according to color, the color being a factor in fixing the price. Disputes between buyer and seller, involving thousands of dollars, arise from diverse methods of testing color. The Bureau was appealed to in the matter by the Society of Cotton Products Analysts, and in cooperation with that society and with the New York Cotton Exchange, the Bureau has undertaken to establish standards of color and standard methods of color testing.

The Bureau investigated experimentally the basis of standardization used in polarimetry of sugars and found that the 100-degree (or 100 per cent pure) point was in error by being placed one-tenth of 1 per cent too high. As a result of the Bureau's work, the International Sugar Commission has appointed a committee, representing the Bureau of Standards, the Austrian Sugar Institute, the German Sugar Institute, and the Physikalisch-Technische Reichsanstalt, to make proper recommendations. As all transactions in sugar the world over are made upon the basis of the polarimeter readings, the importance of a precise value of the 100-degree point is self-evident.

The urgency of establishing refractive index standards arises from the rapidly increasing use of the refractometer as a means of accurately detecting impurities in liquids. In radiometry, the Bureau has established a standard of radiation and now issues radi-

ation standards in the form of electric incandescent lamps, calibrated so as to give in absolute units the energy radiated from the lamp. The need of measuring photostimuli radiometrically is growing among physiologists and psychologists and much time has been given by the Bureau in advising them as to measuring equipment and methods of measuring radiation. Information and advice was also given to meteorologists and astronomers engaged in solar radiation work.

RESEARCH AND TESTING.

In every branch of the Bureau's work research is a prerequisite to establishing standard methods of test, and it usually develops that each line of testing gives rise to problems which require research of an exacting order. This makes it essential that research and testing be combined. From the establishment of the Bureau this has been its policy, and with industrial advance the need for research upon methods of measurement and upon physical constants becomes more pressing.

The investigation of aneroid barometers is important on account of the interest taken by the Government and the public in aviation, flying machines often being accepted upon the indications of these instruments, which sometimes vary in rating over 50 per cent under different conditions. Many makes of these instruments are on the market, and the Bureau made a critical investigation to determine their accuracy when affected by temperature changes and when operated under rising and lowering pressures at different rates. As a result, the Bureau has developed standard methods of test and certification for aneroid barometers and a circular has been prepared for publication covering the subject.

In view of the present demands for aeronautical data, the Bureau will make comparative tests of instruments, motors, and propellers and the materials used in aviation work, and will make exact determination of such aerophysical constants for which the Bureau is equipped.

The development of methods of determining the expansion of materials from room temperature to 700 degrees centigrade (1,260 degrees Fahrenheit) is completed and the equipment installed, and a number of specimens have already been studied. Facilities will soon be available for extending the range down to the temperature of liquid air. This data, especially in the higher ranges of temperature, is of great importance in the use of structural materials.

Much experimental work has been done upon the determination of refrigeration data. An important constant has been practically established, namely, the latent heat of fusion of ice. Many constants of fundamental importance are to be determined, and the Bureau is

receiving the hearty cooperation of the American Society of Refrigeration in this work. Each important constant will be determined by at least two independent methods to insure the highest reliability.

In photometry, besides the work on street lighting, the Bureau has done work on headlights and signals and prepared a report on proposed headlight legislation. The Bureau cooperated with the Baltimore & Ohio Railroad and the Post Office Department in studying the most effective postal-car lighting, which resulted in improved specifications for this purpose. The Bureau also assisted the Navy Department in the preparation of specifications, designing and testing of optical apparatus, recording cameras, etc.

The construction of a 400-foot testing tank for rating water-current meters is nearly completed; approximately 200 such meters were calibrated for different Government departments during the year. Many tests of anemometers, tachometers, fire extinguishers, steam, vacuum, and air gauges, and miscellaneous engineering instruments were made. The critical examination of measuring instruments of all kinds by the different divisions of the Bureau has resulted in direct improvement in such products. Makers of these instruments visit the Bureau to ascertain causes of failure and have appreciated the Bureau's specific criticisms which often result in immediate improvements. Likewise the Bureau is indebted to manufacturers and industrial experts for the most cordial cooperation in every branch of its work.

MATERIALS—TESTING AND RESEARCH.

The insistent demands made by the public for researches as to methods of measurement, properties of materials and finished products is due to the fact that efficiency is the keynote in industry and that measurement is the chief means used to solve its central problems. The Bureau of Standards has facilities and experts for this purpose. Its work on cement illustrates a line of attack upon the problem which is applicable to nearly all materials and products. The Bureau is studying the effects of each factor affecting the quality of cement, its composition, the time and temperature of burning, the fineness of grinding, etc. Through the efforts of the Bureau the Government has adopted standard specifications for cement that are accepted by manufacturers and engineers. The Bureau standardizes the methods of testing cement for its several properties, devises and standardizes the instruments for such tests, studies the significance of each test, and actually tests and certifies many thousands of samples of cement used by the Government in its larger enterprises. The Bureau is now equipped with an experimental cement plant with which it tests directly the suitability of materials for cement making and studies the specific effect of varying

such condition of manufacture in a systematic manner. The properties of cements are thus studied by full laboratory tests and by service tests.

Special researches are conducted upon the strength and life of cement and concrete in actual use, e. g., in sea water and when exposed to the western alkali waters and to other conditions in service. The strength of cement and concrete are also studied by testing machines in the laboratory and by strain gauges in structures during and after erection. In this manner the manufacture and utilization of cement becomes a measured process throughout and under complete control in proportion as the results are applied in industry. The Bureau aims to apply a similar program to all industrial materials, such as metals, clays, limes, paper, textiles, rubber; structural materials, such as building stone, brick, tiling, paints and other protective coatings, and to miscellaneous materials. The aim is to acquire so definite a knowledge of the properties which fit a material for its use and the conditions under which those properties may be unfailingly reproduced in order that producer and consumer alike will be assured of high quality and steady improvement in each material and manufactured product. This comprehensive program will tax the Bureau to its utmost and will involve the most searching and difficult scientific investigations of every detail affecting the quality of the material.

The theory on which this work is based is, briefly, as follows: First, the investigation and identification of those properties upon which the quality of a material depends, and second, the defining of these qualities in such a manner as to permit of their specification and measurement. The material should be made under such measured conditions that the quality is assured and not left to chance or personal judgment alone; it should be tested in advance of its use and if possible during its utilization in manufacturing. Finally, the conditions affecting the life and efficiency of a material should be studied in actual service, since this unites all the factors which affect its usefulness. It is becoming generally recognized that standards of quality must be developed for specific uses based upon accurate measurements of the properties which in each case determine the quality sought.

Cooperation between the Bureau and manufacturers has been found the most practical method of making its work effective. A striking readiness on the part of manufacturers to cooperate has greatly aided the Bureau in the difficult problems involved. An illustration may be found in the conference held at the Bureau during the year on the subject of paper. Government users, manufacturers, testing experts, and purchasing officers were represented; the discussions showed that there is no lack of interest in the effort to place the testing, specifi-

cations, and utilization of paper upon a scientific basis. Similar conferences are being held for the discussion of textiles, rubber, and other materials. Again, the Bureau keeps in close touch with manufacturers by visits of its experts to mills where a frank discussion of materials and methods of manufacture has been of mutual benefit. Manufacturers and testing experts in turn visit the Bureau, and by a free interchange of information misunderstandings are cleared up and a basis for the most cordial cooperation is established.

Among the researches on materials a few illustrations will show the nature of these problems. An investigation of the manufacture of true porcelain from American materials is well under way, with a view to encouraging in this country the manufacture of this and other pottery products now exclusively imported. Numerous studies in various phases of the ceramics industries have been published by the Bureau which are of direct application to these industries. The Bureau, in cooperation with the American Institute of Metals, is engaged in the preparation and testing of bronzes and brasses for the purpose of developing specifications for such alloys. An investigation is in progress upon the causes of failure of railway materials, especially car wheels, axles, and rails. Mills have been visited and measurements of rolling temperatures recorded and other data compiled for study.

The research on the volumetric changes in concrete structures owing to temperature variations and chemical reactions during the hardening of the concrete is being continued. This is a type of fundamental investigation upon vital factors affecting the utility of a material. In cooperation with other departments and with the Cement Manufacturers' Association, the Bureau has undertaken to study the effect of alkali waters on cement as used in irrigation and other projects. The results of a research on the process of hydration of cements are being prepared for early publication.

The behavior of rubber from the crude to the vulcanized state is being investigated by the Bureau with the hearty cooperation of rubber manufacturers. Excellent progress has been made on standard methods for rubber analysis and for the physical testing of rubber. Of immediate interest to lithographers, color-process printers, and chart and map makers is the study of the stretching and shrinkage of paper during the printing processes. This is with a view to overcoming these serious defects which now are a source of great loss to the trade. Solutions proposed lie in the direction of humidity control and the development of minimum-shrinkage papers. A conference was held at the Bureau to establish textile specifications and uniform methods of testing. Investigational work in textiles was done for the Treasury Department in the analysis of imported bagging for cotton and other materials, and for the Ways and Means

Committee on technical problems involved in revising the tariff. Considerable work was done in many other lines toward establishing specifications for goods to be purchased by the various departments of the Government and testing deliveries of goods in order to ascertain their conformity to these specifications.

The specific electrical resistance and temperature coefficient of copper—constants of the greatest importance to the electrotechnical industries—have been experimentally determined and the results have been adopted not only by the interested technical societies in America but are also now recognized abroad as authoritative. Wire tables for cables based on these experiments were computed and will soon be issued.

Excellent work has been done in determining the physical constants of alcohol, in studying the chemistry of paper, in preparing specifications for oils, varnishes, turpentine, pigments, inks, asbestos, and in other chemical lines. The investigation, begun some time ago, with the purpose of correlating the magnetic, electric, and mechanical properties of iron and steel has already yielded important results and when completed promises to be of great practical utility as a reliable means of testing rails for soundness and safety.

Several new materials have been added to the excellent series of standard samples of irons, steels, and other materials prepared, certified, and distributed by the Bureau for use of technical chemists and fuel experts in checking the accuracy of their laboratory methods. The demand for these standard materials has increased greatly.

During the year the large testing machine of the horizontal type for specimens up to 33 feet in length was completed. Tensile tests up to 1,150,000 pounds and compression tests up to 2,300,000 pounds may be made. In cooperation with the American Society of Civil Engineers and the American Railway Engineering Association a series of column tests will be made for the verification of the formulas used in engineering design.

Supplemental to the work of the testing machines is the strain-gauge work. The strain gauge is used to measure the strains and indirectly the strength of structures during erection and later in actual service under working loads. The method is one which will afford engineers, builders, and others to check the correctness of design and the safety of structures. Experimental tests of the method have been made on large bridges, tall office buildings, on the hulls of ships at sea, on the lock gates of the Panama Canal, and on concrete street pavements.

The Bureau cooperates whenever possible with all researches which tend to minimize life hazard. The work in structural materials affords much data useful in minimizing the dangers resulting from defective materials. The scientific study of materials, not only in

avoiding the loss of life and property but by increasing the efficiency of materials, is one of the important fields of usefulness of the Bureau. At the request of the Interstate Commerce Commission, the Bureau investigates the causes of railroad accidents so far as they relate to defective materials, and the Bureau's reports upon defective rails have brought sharply forward the urgency of thoroughly studying this problem. The Bureau is preparing a program for the study of the life hazard involved in high potential electric currents and in lightning discharges. The fund provided by Congress for this purpose should result in practical results of great value in reducing such dangers. In connection with the Navy Department, the Bureau made an experimental observation of sea-water temperatures in the vicinity of icebergs to furnish data for those interested in possible methods of ascertaining the presence of icebergs.

Great progress has been made toward making the work of the Bureau of Standards available and useful to the public, by the publication of scientific and technical papers, circulars of information, conferences on specific subjects, and through the technical press. Nevertheless, every effort will be made during the coming year to make it a more effective factor in solving the great problem of efficiency—the basis of all progress in science and industry.

BUREAU OF THE CENSUS.

A very considerable part of the Census Bureau's activities during the fiscal year was in connection with the deferred work of the Thirteenth Decennial Census. The usual annual investigations regarding financial statistics of cities, production and consumption of cotton, vital statistics, and forest products were conducted; and in addition, work was done on the tobacco inquiry (authorized by act of Congress approved April 30, 1912) and the quinquennial census of electrical industries.

The last-mentioned inquiry relates to the calendar year 1912. The preparatory work was commenced in the latter part of that year, and the actual collection of statistics was begun early in 1913. By the end of June the canvass had been finished in 19 of the 76 districts and satisfactory progress had been made in the others, although in 6 of the cotton-growing States it had been found necessary temporarily to withdraw clerks in the field from the electrical-industries work in order that they might be utilized for the selection and instruction of local cotton agents.

PROGRESS OF DEFERRED THIRTEENTH CENSUS WORK.

Volumes VI and VII, on agriculture, and IX, on manufactures, of the final reports of the Thirteenth Census were issued during the fiscal year. There were also issued 50 of the 53 editions of the

Abstract of the Census (one without supplement and each of the others with a supplement for a particular State or Territory); those for Alaska, Hawaii, and Porto Rico were the only ones remaining to be published after June 30, 1913. The Abstract contains, in condensed form, with text discussion, all the important results of the census for the United States as a whole, except the statistics on occupations, on mother tongue, on ownership of homes, and on the dependent, defective, and delinquent classes; and in the State supplements is given complete and detailed information on all subjects covered by the census except those just named. The publication of the results of the Thirteenth Census was, therefore, much nearer completion at the end of the fiscal year than would appear from the fact that only three of the final volumes had been issued at that time. The work on the other volumes has been progressing, and Volumes II, III, V, and VIII have been issued since the close of the fiscal year; the others will be out in a short time, as practically the only work remaining to be done on them is in connection with their assembling, proof reading, and printing.

The tabulation of statistics of occupations and of the dependent, defective, and delinquent classes had been deferred in order to bring the remainder of the work to completion as soon as possible, so that these lines of work were much further in arrears at the beginning of the fiscal year than were the others. Satisfactory progress was made on the occupations statistics, and at the close of the fiscal year most of the machine work had been finished. Considerable work was done on the statistics of dependent, defective, and delinquent classes during the fiscal year, but this branch of the work is not as near completion as the others.

The compilation of the statistics of mines and quarries also was not as near completion at the end of the fiscal year as most branches of the Thirteenth Census work; and it has since been decided to expedite the publication of the final report on Mines and Quarries (Volume XI) by abandoning the original scheme of issuing separate monographs on the leading mining industries, with the exception of those relating to anthracite and bituminous coal, iron ore, petroleum, and natural gas.

The cost of clerical help for the Thirteenth Census work carried on during the year was more than double that for all other Census work combined.

ADDED WORK IMPOSED BY NEW LEGISLATION.

In April, 1912, Congress passed an act providing for the collection, as of October 1 and April 1 of each year, of statistics regarding the stocks of leaf tobacco held by manufacturers and dealers. The first report under this act was made on November 27, 1912, and was received with much interest by those engaged in the tobacco trade.

The second report was made on May 26, and the third on November 13, 1913.

At the same session of Congress a law was enacted providing that statistics of the consumption, stocks, exports, and imports of cotton and of the number of cotton-consuming spindles should be collected by the Bureau of the Census monthly instead of quarterly, as had been the practice, and making certain minor changes in the method of publishing the statistics of cotton production. The purpose of this legislation was to furnish producers of cotton with information concerning demand as frequently as consumers are furnished with statistics as to supply.

These two acts of Congress have materially increased the work of the Division of Manufactures of the Census Bureau. The appropriations for carrying on this additional work have been much smaller than were requested, but the Bureau has endeavored to make the best use possible of the funds provided.

In January, 1913, there was published a midseason report showing the amount of cotton seed crushed and linters obtained during the ginning season up to December 31. Theretofore such data had been published annually at the end of the cotton season.

WORK FOR THE FISCAL YEAR 1914.

In view of the delay in the publication of the results of the Thirteenth Census, the Director, early in the fiscal year 1914, appointed a committee consisting of the chief statistician for manufactures, the chief clerk, and the expert special agent in charge of the Division of Agriculture to investigate the work in all the divisions of the Bureau and to make recommendations which would lead gradually to a complete reorganization. This committee accumulated a large quantity of material and made a number of recommendations which resulted in great improvement of certain branches of the Bureau's work.

It is the special desire and purpose of the Director to bring the work up to date, and to this end he deemed it essential to have the assistance and advice of persons who were outside of the Census Bureau but were familiar with its work. He accordingly selected for this purpose Hon. S. N. D. North and Hon. W. R. Merriam, former Directors of the Census; Prof. Walter F. Willcox of Cornell University, who had been a chief statistician in the Bureau during the census of 1900 and who for the greater part of the time since has been connected in some capacity with the work of the office; Mr. W. S. Rossiter, who had been a chief of division and later chief clerk of the Bureau, and Hon. Daniel C. Roper, First Assistant Postmaster General, who had been an expert special agent and chief of division in the Census Bureau. These gentlemen, with the excep-

tion of Mr. Roper, were given appointments as expert special agents. After examining the material and recommendations made by the committee of the regular employees of the office, they conducted an independent investigation of conditions in the Bureau, conferring with the chief statisticians and other officials who were in charge of the different branches of the work. They found that, while the larger proportion of the work of the Thirteenth Census had been finished, nevertheless a considerable quantity of statistical information collected at that census still remained to be tabulated and published. The most serious delay was in the work on statistics of occupations. This, however, as already stated, had been deferred, along with certain other branches of the work, in order to permit the publication of the balance of the reports at the earliest possible date. The work on some of the annual reports of the Bureau—in particular, Financial Statistics of Cities, 1912, and Mortality Statistics, 1911 and 1912—was also far in arrears.

The expert special agents advised the Director that no additional tabulations or analyses should be undertaken in connection with the unfinished branches of the Thirteenth Census work, and that the work on those branches and on the delayed annual reports could and should be curtailed so as to insure their publication not later than December 31, 1913. The recommendations of the expert special agents are as follows:

1. That the proposed second machine run of the cards for the purpose of tabulating occupations be abandoned, thus expediting the time of production by about six months and reducing the cost of finishing that branch by about \$65,000; and that the tables yielded by the first run of the cards be printed without derivative tables or text. These tables give the number of persons of each sex in each occupation, and classify them by race, nativity, and parent nativity, and five age periods, thus insuring the publication of the primary classification of occupational data as reported at previous censuses.

2. That the report upon native tongues be limited to the chapter to appear in the forthcoming final volume on population.

3. That the tables relating to mines and quarries now in the form of printed bulletins, proofs, or manuscript be sent to the Public Printer at once, the same to constitute the final report on mines and quarries, and that no further tabulation or text be prepared in connection with that report.

4. That tables for the benevolent institutions, and for the institutional population—namely, prisoners, insane and feeble-minded, and paupers—be prepared and published without further percentage or other derivative tables and without analytical text.

5. That the annual compilation of the statistics of forest products be abandoned. There appears to be no authority of law for an annual inquiry of this character, which the records show to have cost from \$20,000 to \$40,000 a year.

6. That the annual report on financial statistics of cities for 1912 be completed and published by January 1, 1914, by curtailing the amount of detail to be included; that the schedules and report for 1913 be similarly curtailed; that the reports for the years 1912 and 1913 be printed without text, except such as is necessary for explanation and definition; and that until the annual reports

on the financial statistics of cities are brought up to date, no attempt be made to prepare a report on general municipal statistics. This recommendation is based on the fact that delay in the compilation and publication of the annual municipal reports detracts seriously from their value.

7. That reports on mortality statistics for the years 1911 and 1912 be published before the close of the present calendar year. To make this possible, the text of these reports should be reduced to a minimum or omitted, the tables condensed, and no effort made to publish a report on births until the mortality reports are published.

8. That work upon the standardization of death rates, life tables, and occupational mortality be suspended until the above reports have been published. There is no reason why the mortality report for each year should not be compiled and published prior to the close of the succeeding calendar year.

9. That the emergency presented by the delay in completing the Thirteenth Census justifies the Director in requesting the Secretary of Commerce to lay the matter before the President with the view of securing his instructions to the Public Printer to give precedence so far as practicable to the remaining publications of the Thirteenth Census and the annual reports long overdue.

These recommendations are being followed, and it is believed that the deferred Thirteenth Census work and the delayed annual reports will be completed and published before January 1, 1914.

Official Register.—Work on the Official Register for 1913 is progressing as rapidly as possible. The necessary information has been obtained from the several departments and offices, and its compilation is now well toward completion.

As a result of suggestions made by the Department of Commerce, the following provision was incorporated in the urgent deficiency bill approved October 22, 1913:

Hereafter the Official Register of the United States shall not contain the names of those persons heretofore published in Volume II relating to the postal service, namely, postmasters, assistant postmasters, clerks in post offices, city and rural carriers, employees of the sea-post service, employees of the Railway Mail Service, employees of the mail messenger service, and mail contractors; nor shall it contain the statement of allowances made to contractors for carrying the mails or the list of ships and vessels belonging to the United States, as heretofore published in the said Official Register; and all Acts or parts of Acts inconsistent with the foregoing provision are hereby repealed.

This legislation will greatly simplify the preparation of the Official Register and will very materially decrease the expense of the work. Heretofore it has been necessary to obtain the names of the employees of the Postal Service by correspondence with each postmaster in the United States. The number of such employees on June 30, 1913, was 290,605. Volume II of the last edition of the Register (1911) contained 774 pages, and the cost of printing alone was \$12,600. It is believed by the Department of Commerce and by the Post Office Department that the practical value of this volume has not been sufficient to justify the labor and expense involved in its preparation.

The Director of the Census has called attention to the fact, already pointed out by his predecessor, that the Official Register in its present

form (even with the names of postal employees omitted) is unnecessarily expensive and cumbersome. He believes that the following plan, which modifies slightly the one proposed by his predecessor, will, if adopted, result in very material saving to the Government and will at the same time preserve all the valuable features of the present Official Register:

(1) The establishment of a card directory, prepared and maintained by the Civil Service Commission from information furnished by the executive departments and independent offices, showing the name and status of every person in the Government service except the officers and enlisted men of the Army, Navy, Marine Corps, and Revenue-Cutter Service. Lists of officers of the Army, Navy, and Marine Corps are already published annually in the Army Register and Navy Register, issued by the War and Navy Departments, respectively.

(2) The elimination from the Official Register of detailed lists of all employees, by name.

(3) The publication annually by the Bureau of the Census of an official register containing—

(a) A list of all employees of the Government (except officers and enlisted men in the Army, Navy, Marine Corps, and Revenue-Cutter Service) whose duties are of an executive, supervisory, technical, or professional character, and whose compensation is \$2,000 or more per annum.

(b) Statistics relating to the Government service, to be prepared from the Civil Service Commission's card directory.

A bill substantially embodying this plan (except that \$1,500 was fixed as the lowest compensation of employees whose names should be included in the Official Register) was introduced in the House of Representatives on August 8, 1913, by Hon. W. C. Houston, of Tennessee.

Electrical industries.—The field work for the census of electrical industries has been finished. The examination of the returns is now in progress, and the tabulation has been begun. It is expected that the preliminary report will be ready for publication in February, 1914, and that the final report will be ready for the printer early in the following spring.

Cotton statistics.—While the collection of statistics of the quantity of cotton ginned from the crop of 1913 has proceeded in the same manner as heretofore, the Bureau has been able to arrange for the more frequent publication of these statistics by counties. It had been the practice to publish county figures only for December 13 of each year and at the end of the season, the State totals alone being given at other times. There was, however, a great demand for information as to the quantity of cotton ginned in the individual counties up to

the date of each ginning report, and the Census Bureau accordingly gave the local special agents permission to publish this information in the county newspapers just as soon as their reports could be received at the Bureau in Washington and the data verified. The local papers throughout the Southern States have been greatly pleased by this action of the Census Bureau, and many of them have written the office expressing their appreciation of it.

Requests have been made of ginners for suggestions in regard to improving the method of collecting and publishing statistics of the quantity of cotton ginned, and almost invariably the replies have indicated complete satisfaction with the way in which the work is now being done.

The Bureau of the Census has also arranged for an additional report on cottonseed and linters, which will show the quantity of seed crushed and linters obtained from the crop prior to December 1 of each year. Heretofore there have been only two reports issued annually on this important subject, one showing the quantity of seed crushed prior to January 1 and the other, published at the end of the crushing season, showing statistics of the total quantity treated.

Tobacco statistics.—As already stated, three semiannual reports of the quantity of leaf tobacco on hand, relating to October 1, 1912, April 1, 1913, and October 1, 1913, respectively, have been made by the Bureau.

The Bureau of the Census has been able to make more satisfactory cooperative arrangements with the Bureau of Internal Revenue in connection with the collection of these statistics for the forthcoming report than it was able to make for either of the two preceding ones, so that it is now possible for the Bureau to secure, by correspondence with the collectors of internal revenue in the different districts, the names and addresses of the establishments covered by the law, together with all the information it requires in regard to delinquent establishments and establishments whose mail has been returned by the post offices as undelivered. This arrangement obviates the necessity of sending special agents into the field to secure the information, thus materially expediting the work and reducing its cost. The collectors have responded very promptly to the Bureau's requests for information of this character.

Financial Statistics of Cities.—In compliance with recommendation No. 6 of the expert special agents, the annual report on Financial Statistics of Cities for 1913 will be published in 1914 with somewhat less detail than has been included in many of the earlier reports, and will contain no text except such as is necessary for explanation and definition.

Vital statistics.—The Division of Vital Statistics, in accordance with recommendations Nos. 7 and 8 of the expert special agents, will

publish the annual reports on Mortality Statistics for the years 1911 and 1912 before the close of 1913. In order to do this it will be necessary to omit certain rate tables and explanatory text, but the omission will be supplied in the report for 1913, which will be published considerably before the close of 1914.

Wealth, debt, and taxation.—The urgent deficiency act approved October 22, 1913, authorized the use of not to exceed \$50,000 of the unexpended balance for collecting statistics for the fiscal year 1913. This sum will be utilized in conducting the intercensal inquiry on wealth, debt, and taxation. So far as possible, the printed reports of the various State and other governmental units, and such other reports as may be available, will be used by the Census Bureau as sources of information. This will make it necessary in many cases to use data for the fiscal year 1912. The Bureau is now engaged in collecting all reports of this nature which can be secured without cost, and has already accumulated a large amount of material. A critical study is being made of the data at hand, with a view to ascertaining just what can be done with printed and other available reports before sending employees into the field to make the actual canvass. The Post Office Department has been requested to cooperate with the Department of Commerce by directing postmasters in small towns, to which it would not be feasible to send agents of the Census Bureau, to furnish certain of the data needed. The scope of the report on this subject will be substantially the same as that of the preceding one, which related to the year 1902.

OFFICE FORCE.

Permanent employees.—The legislative, executive, and judicial appropriation act for the fiscal year 1913 provided for 610 permanent employees of the Census Bureau, or substantially the same number as had been authorized for the fiscal year 1909 (626), prior to the Thirteenth Census period. The distribution of the employees among the several salary classes in 1913 differed materially, however, from that which prevailed in 1909, the number of positions in the higher classes and in the \$900 class being increased and the number at \$1,200 being reduced.

The appropriation act for 1914 created seven additional positions at \$1,400 and five additional places at \$1,200 and reduced the number of \$900 positions by one, thus increasing by eleven the total number of places on the permanent roll of the Bureau.

The appropriation act for 1913 provided that the Civil Service Commission, in certifying eligibles from the examination registers for appointment to positions on the permanent roll of the Bureau during the fiscal year 1913, at salaries of \$1,200 or less, should, so far as practicable under the law of apportionment, give preference to those who had had at least one year's experience in census work.

A statistical-clerk register was established by the Civil Service Commission for the special use of the Census Bureau. Prior to the establishment of this register appointments to the Bureau's permanent force were made principally from the departmental-clerk register, but later, after the statistical-clerk register had been established, most of the permanent appointments were made therefrom. The majority of the clerks drawn from these two registers had been temporary Thirteenth Census employees and were given preference in certification under the provision of law just mentioned.

Temporary force.—The appropriation act for 1913 authorized the employment of not to exceed 175 temporary clerks in the Census Bureau at salaries not to exceed \$900, and appropriated \$120,000 for that purpose. It was further provided that these clerks should be appointed from among the former temporary Thirteenth Census employees. These 175 temporary clerks were appointed at \$720 per annum. Inasmuch as the appropriation act did not pass until August 23, it was not possible to appoint any of them before September 1, and many were not appointed until about October 1. Consequently, the appropriation of \$120,000 was considerably more than sufficient to compensate the 175 employees until the end of the fiscal year. The Bureau therefore asked for authority to increase the number of these employees without an increase in the amount of the appropriation. This authority was granted by the appropriation act for 1914, which was approved March 4, 1913. The temporary force was accordingly increased until it reached a maximum of 265 in May and June, 1913. On June 30, 1913, all these temporary positions lapsed under the terms of the act creating them.

APPROPRIATIONS AND EXPENDITURES.

Financial statement, fiscal year 1913.

Administrative:	
Salaries for administrative places.....	\$36,179.15
Salaries for Division of Correspondence and Mail.....	20,026.50
Salaries for library.....	4,987.24
Salaries for watch, labor, and char forces.....	26,580.07
Rent.....	21,000.00
Stationery.....	9,809.20
Miscellaneous expenses.....	14,767.29
Books and periodicals.....	487.72
Total.....	\$133,897.17
Geographer's Division: Salaries.....	
	19,740.23
Machine shop:	
Salaries.....	23,246.00
Materials, supplies, etc.....	3,349.12
Total.....	26,595.12
Thirteenth Census work:	
Population—	
Supervision.....	\$11,518.35
General and State reports.....	98,458.32
Occupations.....	177,985.33
Foreign born.....	445.12
Tenure of homes.....	16,138.59
Total.....	304,545.76

Thirteenth Census work—Continued.

Agriculture—		
Supervision.....	\$3,362.33	
General and State reports.....	31,396.73	
Color, tenure, and size.....	16,651.42	
Plantations and ownership of tenant farms.....	14,913.17	
Irrigation.....	2,831.29	
Total.....		\$74,154.99
Manufactures—		
Supervision ^a	9,708.99	
Completion of manufactures reports.....	41,819.74	
Industrial districts.....	1,276.62	
Mines and quarries.....	17,416.89	
Total.....		70,222.24
Institutions.....		39,167.07
Revision and Results.....		24,319.79
Publications.....		11,333.21
Total.....		\$523,743.06
Annual investigations:		
Cotton.....	253,291.44	
Tobacco.....	25,509.76	
Electrical industries.....	24,544.18	
Forest products.....	19,045.37	
Vital statistics.....	81,709.16	
Statistics of cities.....	82,371.41	
Total.....		486,471.32
Miscellaneous.....		7,393.91
Grand total.....		1,197,840.81

Title of appropriation.	Appropriations.	Expenditures.	Balance.
Expenses of the Thirteenth Census, 1913.....	^a \$102,339.30	\$99,998.68	\$2,340.62
Salaries, Bureau of the Census, 1913.....	^a 593,823.28	574,250.58	19,572.70
Temporary clerks, Bureau of the Census, 1913.....	120,000.00	116,194.66	3,805.34
Tabulating machines, Bureau of the Census, 1913.....	^b 26,643.93	26,595.12	48.81
Collecting statistics, Bureau of the Census, 1913.....	342,000.00	291,137.25	50,862.75
Tobacco statistics, Bureau of the Census, 1913.....	15,000.00	14,999.83	.17
Cotton statistics, Bureau of the Census, 1913.....	30,000.00	28,543.97	1,456.03
Rent, Bureau of the Census, 1913.....	22,080.00	21,000.00	1,080.00
Contingent expenses, Department of Commerce and Labor, 1913.....	25,500.00	25,120.72	379.28
Total.....	1,277,386.51	1,197,840.81	79,545.70

^a Because of complications arising from the fact that the Bureau operated under joint resolutions of Congress from July 1 to Aug. 22, 1912, inclusive, the appropriation for "Salaries, Bureau of the Census, 1913," was divided by the Treasury Department into two parts—one, under the head "Expenses of the Thirteenth Census, 1913," amounting to \$102,339.30; and the other, under the original head of "Salaries, Bureau of the Census, 1913," amounting to \$593,823.28. The sum of these two items (\$696,162.58) is a little less than the amount originally appropriated (\$696,340).

^b Includes \$643.93 reimbursement for work done for Bureau of Immigration.

Fiscal year 1914.—The appropriation for 1914 was \$1,122,820. The item for salaries was increased to \$711,240, the item for collecting statistics reduced to \$354,000 (as compared with \$387,000 in 1913, this amount including \$45,000 for collecting statistics of cotton and tobacco), and the item for tabulating machines reduced to \$10,000. No new appropriation was made for printing and binding the results

^a Includes cost of supervision for forest products, cotton, tobacco, and electrical industries.

of the Thirteenth Census, but the unexpended balance of the appropriation for 1913 was reappropriated and made available for 1914.

Fiscal year 1915.—The amount estimated for the fiscal year 1915 is \$1,709,720. The estimate for salaries has been increased to \$722,140, that for tabulating machines to \$15,000, and that for collecting statistics to \$925,000. The estimates for the other items are the same as the amounts appropriated for 1914.

In connection with the estimate for salaries, a reclassification has been asked for. The present and the proposed constitution of the office force of the Bureau (exclusive of special agents) are shown in the following statement:

PRESENT OFFICE FORCE.		OFFICE FORCE ACCORDING TO ESTIMATES FOR 1915.	
Director	\$6,000	Director	\$6,000
Chief clerk	2,500	Chief clerk	2,500
4 chief statisticians, at \$3,000 each	12,000	Chief statistician	3,250
Geographer	2,000	2 statisticians, at \$3,000 each	6,000
Stenographer	1,500	Statistician	2,750
8 expert chiefs of divisions, at \$2,000 each	16,000	2 assistant statisticians, at \$2,200 each *	4,400
11 clerks, at \$1,800 each	19,800	Geographer	2,000
20 clerks, at \$1,600 each	32,000	Stenographer	1,500
39 clerks, at \$1,400 each	54,600	8 expert chiefs of division, at \$2,000 each	16,000
305 clerks, at \$1,200 each	366,000	12 clerks, at \$1,800 each	21,600
83 clerks, at \$1,000 each	83,000	12 clerks, at \$1,680 each	20,160
86 clerks, at \$900 each	77,400	15 clerks, at \$1,560 each	23,400
Subclerical force	38,440	18 clerks, at \$1,440 each	25,920
Total	711,240	23 clerks, at \$1,380 each	31,740
		34 clerks, at \$1,320 each	44,880
		54 clerks, at \$1,260 each	68,040
		149 clerks, at \$1,200 each	178,800
		46 clerks, at \$1,140 each	52,440
		34 clerks, at \$1,080 each	36,720
		41 clerks, at \$1,020 each	41,820
		18 clerks, at \$960 each	17,280
		85 clerks, at \$900 each	76,500
		Subclerical force	38,440
		Total	722,140

* The two assistant statisticians at \$2,200 are in lieu of two office special agents at \$6 per day, whose compensation would be paid from the appropriation for collecting statistics. A corresponding reduction has been made in the estimate for this item, so that, while the increase in the estimate for salaries as compared with the appropriation for 1914 is \$10,900, the net increase in the estimate for compensation of office employees, including special agents, is only \$6,500.

The object of this proposed change is twofold—first, to provide a larger proportion of places in the higher salary classes; and, second, by increasing the number of salary classes, to make possible more frequent promotions.

The Bureau has at present an unduly large proportion of its employees in the \$1,200 class, although there has been a considerable improvement in this respect since the fiscal year 1909. The proposed reclassification, while calling for only a slight increase in the

total appropriation for salaries, provides for a material increase in the number of higher-salaried positions. The estimate calls for 12 clerks at \$1,800 as compared with 11 at present; for 12 clerks at \$1,680 and 15 at \$1,560, or 27 at an average salary of about \$1,620, as compared with 20 at \$1,600 in the present classification; and for 18 at \$1,440, 23 at \$1,380, and 34 at \$1,320, or an aggregate of 75 at salaries ranging from \$80 below to \$40 above \$1,400, as compared with 39 at \$1,400 in the present classification.

Furthermore, as already stated, the proposed classification, if carried into effect, will, by providing so many more salary classes, make possible more frequent promotions, with a resultant improvement in the *esprit de corps*.

The increase of \$5,000 in the estimate for tabulating machines is made because of the increase of work in the mechanical laboratory incident to the census of manufactures.

The large increase (\$571,000) in the estimate for collecting statistics is accounted for mainly by the item of \$566,400 for the quinquennial census of manufactures, which will relate to the calendar year 1914. The last previous census of manufactures, relating to the calendar year 1909, was taken at a cost for field work of \$517,044. The increase in the estimated cost is due largely to the fact that the census of 1909 was taken in connection with other field work, so that the cost of each branch was greatly reduced.

An item of \$18,000 is included for transcripts of birth records. No corresponding appropriation was made for 1914. Slight increases are made in the items for transcripts of death records and statistics of cities, and slight decreases appear in the items for cotton statistics and tobacco statistics.

A reduction of \$4,400 is made in the estimate for salaries of expert special agents to offset an item of that amount for salaries of two assistant statisticians (new positions) at \$2,200.

My report of the conditions in the Bureau of the Census would not be complete without making record here of the correspondence between the Director and myself regarding the safety of the records in that building.

Under date of September 27, 1913, the Director wrote me as follows:

There are in my custody in the Census building a number of volumes of the returns of the census from 1790 to 1900, which are of great value, and it would be impossible to replace them if they were destroyed. The names of the heads of families returned at the census of 1790 were considered of such great value that they were published, in order that they might be placed on record in different libraries and render it impossible for all to be destroyed. These returns, however, are incomplete, as we have no returns for the State of Delaware for 1790; none for the State of Georgia for 1790, 1800, and 1810; Kentucky is missing for 1790 and 1800; New Jersey from 1790 to and including 1820; Tennessee from 1790 to and including 1810, and Virginia for 1790 and

1800. A number of the missing returns referred to were destroyed when the Capitol was burned by the British, and the others from fires in the Patent Office.

In addition to the records of population, we have the following-named bound volumes:

Subject.	Number of volumes.
Agriculture.....	644
Mortality.....	131
Social statistics.....	43
Industries.....	197
Defectives.....	68
Total.....	1,083

The total number of volumes from 1790 to 1880 comprised 4,622. In 1890, when the schedules were not bound, we had approximately 44,000 bundles of schedules. For 1900 we have 2,812 volumes. The population returns for 1910 are in a fireproof vault and fill it completely. They have not been bound and are constantly referred to. The census returns from 1790 to and including 1900 are continually referred to for genealogical purposes, and the returns for 1850 and 1860 are constantly being examined to secure data showing the ages of pensioners, as they are unable to obtain any other record evidence of their ages. These volumes, especially, are proving invaluable and could not, of course, be replaced if they were destroyed, and as time passes by the census returns will prove of greater value, as it is the only list to which individuals can refer in order to establish relationship in their families, often required in settling estates.

In addition to the census returns, we have many division records, the loss of which would cause great embarrassment and thousands of dollars would have to be expended to attempt to replace them. For instance, the Geographer's Division has the plans of division into enumeration districts, into which the country was divided in 1910. These official records, if lost, could not be replaced and would involve great expense in the preparation for the Fourteenth Census. There are in all the divisions of the Census Bureau division records that are essential in preparing for another census, and they would all be lost if there was a fire which destroyed the present building occupied by the Census Bureau. As a precautionary measure, I have had the chief clerk post "No smoking" placards throughout the building and have issued an order positively prohibiting smoking in any part of the present building. While orders against smoking were previously issued by my predecessors, I have been informed that no action was taken to enforce them in toilet rooms and among the higher officials. It will probably be necessary for me to take drastic action in some case in order to show, by example, that there must be no smoking in the present Census building.

The necessity for a fireproof vault to inclose these records has been conceded at every enumeration, and when the present Census building was built a vault was placed therein, which was large enough to hold all the returns of population from 1790 to 1900, except the schedules for 1890. This vault now contains only the unbound population schedules for 1910. The bound volumes containing the returns of the other censuses, except 1890, have been placed on metallic shelves in the northern part of the large east room. The census schedules from

1790 to 1900, except those of 1890, now occupy in the Census Bureau a space 45 by 26 feet, 12 feet high. The population returns for the census of 1890 require about as much space as the returns for the other enumerations; that is, if we attempted to place the returns in a vault, it would have to have approximately 2,340 square feet for cases at least 12 feet high.

To this I replied on October 3, as follows:

Referring to your communication of the 27th on conditions as regards the fire risk to valuable records in the building at present occupied by your Bureau, let me say that your instructions prohibiting smoking are approved, as is also your intention to enforce them strictly. Kindly give consideration to any other precautions that may further provide safety, such as absolute cleanliness in out-of-the-way places, supervision of the night watchmen, provision of fire-extinguishing appliances readily accessible, arrangements for the prompt removal of the more valuable part of the records in case of fire. In short, take whatever steps your judgment suggests and the means at your disposal permit to prevent loss.

Take a note to bring the matter again to my attention the latter part of November that I may bring the subject before both Houses of Congress in the hope that they may provide funds which will permit our putting these invaluable records into a condition of safety. In the meantime I suggest your sending a copy of your letter to me and of this, my reply, to the Chairmen of the House Committee on the Census and the Senate Committee on the Census, in order that they may be fully informed.

BUREAU OF FISHERIES.

FISH-CULTURAL WORK.

Although there were no material changes in the methods pursued, and the appropriation for the propagation of food fishes was the same as in the preceding year, the output of fish and eggs during the fiscal year 1913 was the largest in the Bureau's history. This was due to an improvement in the efficiency of the personnel and to the extension of the work into new productive fields by the operation of inexpensive auxiliary stations at well-selected points.

The total output of the hatcheries was 3,863,593,000, of which 3,421,591,000 were fry, 19,726,000 were fingerlings, yearlings, and adults, and 422,276,000 were eggs, most of the latter being furnished to States for hatching and planting within their own borders under the direction of local fishery authorities. Thirty-four permanent or main hatcheries and 102 substations and egg-collecting stations were operated during the year in 30 States and the Territory of Alaska. Two additional stations are in course of construction. The lobster and 39 species of fish were propagated, of which 12 species were handled in excess of 50 million each, yet despite the variety and the enormous and increasing scope of the operations it is impossible to satisfy the demand for fish to stock public and private waters.

As compared with the preceding year there were conspicuous increases in the hatch of chinook, silver, and dog salmon. The condi-

tions on the Sacramento River and its tributaries and at other places in California, low water during part of the season and freshets later, reduced the collections of eggs of the chinook and silver salmons in that State, but this was more than compensated for by the favorable climatic conditions on the Columbia River and at other places in Oregon. The two Columbia River hatcheries were taxed to their utmost capacity and eggs were still available when all facilities for handling them were exhausted. At Baker Lake and auxiliary stations in Washington the output of chinook, blueback, silver, and dog salmons and steelhead trout was about double that of the preceding year, and at the Puget Sound stations a slight falling off, due to the destruction of retaining racks by freshets, was more than offset by collections at several new field stations.

The operations of Afognak station, Alaska, were seriously interfered with by the eruption of Katmai Volcano on June 6, 1912, which covered the island with ash and sand to an average depth of 9 inches. It is estimated that 20,000 adult salmon were killed at the head of Litnik Lake, while thousands more were driven from the streams during the spawning season. Not only were the conditions such as to militate against the collection of eggs, but heavy losses were sustained among the comparatively few collected, owing to the accumulation of volcanic ash in the hatching troughs. Toward the end of the year temporary field stations were established to test the conditions for egg collecting at Eagle Harbor and Eganak Lake, on Kodiak Island.

The facilities at Yes Bay station, Alaska, were improved and augmented during the year, but the take of blueback-salmon eggs was 8 or 9 per cent below that of the preceding year, owing to low water, followed by heavy freshets which destroyed the racks and liberated several thousand ripe fish.

Despite the magnitude of the fish-cultural operations on the Pacific coast, the intensity of the salmon fishery is such that in many places there is a distinct falling off in the run. There is no doubt that part of this decrease is occasioned by defective State administration and legislation, but in a further attempt to overcome the retrograde tendency of the catch it is the purpose of the Bureau to so modify its methods in respect to the salmons as to rear a larger proportion of them before they are planted. It is believed also that the basis of cooperation with the States may be changed for the better.

The take of shad eggs at the stations in the Chesapeake Basin was less than 40 per cent of that of the preceding year, and there is no doubt that this is in large part due to the character of the fishery in the bay and its tributary streams. The number of the pound nets is excessive and they are set in strings which extend miles from shore and, together with the anchored gill nets, effectively obstruct the passage of the fish to their spawning grounds in the rivers. The

conditions are similar to those formerly obtaining in Albemarle Sound and the upper part of Pamlico Sound, N. C., but which the enlightened policy of the State has corrected. As the result of the maintenance of a continuous open passage from the sea to the rivers, the catch of shad in North Carolina during the past season was as great as or greater than in any other year of the history of the fishery, and the take of eggs at Edenton station, N. C., reached 138 million, compared with the low-water mark of 6 million the year before remedial legislation was enacted. The fishing industry and the fish-food supply of the Virginia rivers are seriously menaced unless prompt and effective steps are taken to improve existing conditions. A conference of the authorities of Virginia and Maryland with officers of the Bureau of Fisheries has been held, from which it is hoped effective results may spring.

On the Great Lakes and other waters near the Canadian boundary the results of operations were various. The take of lake-trout eggs on Lake Superior, owing to storms, was below expectation in both quantity and quality, and on Lakes Huron and Michigan it was interfered with by the lateness of the season, which brought the climax of the spawning into the close time when no eggs could be obtained. While storms interfered with the whitefish work at the Michigan stations, Put-in Bay station, on Lake Erie, had the most successful season in its history so far as this species was concerned. On the contrary, the pike-perch work on Lakes Huron and St. Clair was vastly more successful than in the preceding year, while on Lake Erie storms and flood water rendered it very disappointing. On Lake Champlain the take of pike-perch eggs was comparatively small and would probably have been an almost complete failure had it not been for the establishment of a collecting station and fish pen at Sandy Point, a step which will probably insure greater efficiency in the future.

Lobster culture was conducted at but two stations (Boothbay Harbor, Me., and Gloucester, Mass.), nothing being done with this species at Woods Hole, as the number of available brood lobsters on the Massachusetts coast was insufficient to warrant the operation of two hatcheries in that State. The stock of brood lobsters at Boothbay Harbor was the largest ever secured, but the average size was smaller and an unusual number dropped their eggs in the pound, so that the take of eggs was smaller than in the preceding year. The spring collection of brood lobsters at Gloucester was the poorest for many years. During the spring 106 lobsters, with eggs attached, were liberated off Cape May, N. J., in an attempt to establish the lobster more abundantly in that vicinity.

Flatfish were unusually scarce at Boothbay Harbor during the spawning season, but the loss in incubation was unusually low, and

413,961,000 fry were hatched. At Gloucester 230,070,000 were hatched and distributed, about two-thirds as many as in the preceding year, the falling off being due to the extraordinary crowding of the hatchery with other species. At Woods Hole the supply of brood fish was abundant, but the eggs were of indifferent quality and the mortality was high. Cod were not as abundant as usual at Boothbay Harbor, but great numbers were hatched at Gloucester and Woods Hole. Haddock were taken in large numbers in the vicinity of Boothbay in April and about 100 million eggs were secured for the station. The take of eggs at Gloucester was also unusually heavy and, with the other species handled there, taxed the facilities of the station to such an extent that in addition to shipments to Woods Hole nearly 200 millions of partly incubated pollock, cod, and haddock eggs were planted off the harbor. On the whole, the work of the marine stations was highly productive.

At the fresh-water stations of the Bureau the conditions were generally satisfactory, but the product of the pond stations devoted to the propagation of black bass and related species, though greater than ever, was as usual wholly unequal to the demand. An increase in the facilities for this branch of the work is urgently needed and it is hoped that requirements will be to some extent satisfied by the stations now under construction in Kentucky and South Carolina. It is probable, however, that black bass can not be supplied in quantities equal to the demand for some time to come.

At some of the trout stations it has been found economical to supplement the supply of brook-trout eggs derived from the brood fish carried in ponds and collected from wild stock by purchase from commercial hatcheries, and the total output of the species has been increased, while, owing to unfavorable climatic conditions, the product of rainbow trout fell off during the year.

In the Yellowstone National Park the provision of additional facilities and the extension of the field of operations resulted in the collection of 29 million blackspotted-trout eggs, more than double the number secured in any previous year. Plans will be made to further increase the work in this field, at present the chief source of the Bureau's supply of eggs of this species.

Owing to high water it was not possible to secure eggs of the steelhead trout from the tributaries of Lake Superior, but 50,000 eggs were transferred from the Pacific coast to Duluth and after hatching were planted in these streams. About 176,000 eggs were obtained from Lake Memphremagog, where the Bureau has introduced this species, and were hatched at St. Johnsbury, a new departure in fish culture at that station. The steelhead, which is a western species, is becoming important in the eastern waters in which it has been intro-

duced, not only as a game fish but as a valuable and growing factor in the commercial fisheries.

The rescue of fishes left by the recession of overflow waters in the Mississippi Valley was prosecuted with varying success. These fishes (black bass, crappie, sunfish, catfishes, and other river species) are taken from the sloughs where otherwise they would die, and are either returned to the main streams or used for stocking other inland waters.

The Bureau regards as one great object of its activities the ability to supply in large numbers a fish suitable for the shallow, warm-water ponds and streams of the western farming country, and to this end it is experimenting with the propagation of the buffalofish, though as yet with indifferent success.

INVESTIGATIONS AND SURVEYS.

At the request of the State authorities a survey of the oyster bottoms of Lavaca Bay, Tex., was begun by the steamer *Fish Hawk* early in February, 1913, and continued until completed in May. At the end of the fiscal year the plotting and computations had been finished and the report will be completed during the current year. Investigations of enemies of the oyster have been made as opportunity has been afforded, but the lack of continuity in this work caused by the insufficient personnel has prevented rapid progress. The Bureau has repeatedly urged that additional assistants be provided for work in connection with shellfishes, but although the oyster interests of all parts of the country are asking for aid the appeal has been thus far unheeded by Congress. The oyster, clam, and crab fisheries yield a first product valued at about \$17,000,000, yet they receive less consideration at the hands of the Government than is given to stocking for purposes of sport the minor waters of a single State.

Mussel propagation in the Mississippi Valley assumed during the year proportions which warrant expectation of commercial results, 150 million larval mussels being planted in 15 localities. The most extensive work was at Lake Pepin, Minn., and in the vicinity of Fairport, Iowa, but plants of consequence were made at other places in Minnesota and Iowa and in Wisconsin, Illinois, Indiana, and Arkansas. As a necessary part of these operations about 100,000 food and game fishes were handled, of which a large number were rescued from overflowed lands and returned to the rivers. Laboratory and field investigations have opened up sources of information which will make it possible to propagate a larger quantity and greater variety of mussels during the ensuing year.

Field operations were curtailed by the delay of appropriations early in the year, but examinations were made of the mussel resources of

several localities, one of which opened up a possible new source of supply of commercial shells.

The investigation of the Illinois River in respect to the effects of the discharge of sewage from the Chicago Drainage Canal was completed. The report, which is ready for publication, furnishes valuable data on the general subject of the pollution of streams.

The waters of the Truckee River Basin were under investigation at various times during the year. As has been indicated in previous reports of the Bureau, the use of the waters of this region for irrigation purposes has already reached a stage resulting in the destruction of large numbers of valuable food fishes. It appears inevitable that with the growth of the area irrigated the streams eventually will be reduced in places to practically dry beds at certain seasons, and the native fishes will become a negligible factor in the food supply. It is possible that a way may be found to compensate for this deficiency by introducing other species of nonmigratory habit which can be acclimatized to the permanent waters, but it is becoming yearly more evident that it will be necessary in some cases to make a frank recognition of the fact that more and cheaper food can be produced in arid regions by the irrigation of the land than by the conservation of the fishes in the streams. It is the purpose of the present investigation to determine whether it is possible to develop the one source of food supply while maintaining the other.

During the summer of 1912 the Bureau continued its examinations of lakes in Washington and Idaho to determine their physical and biological characteristics, particularly as they may affect the culture and acclimatization of fishes. It frequently happens that disappointing results follow the planting of fish in lakes which superficially appear to be admirably adapted to the purpose, and recent investigations have shown that the failures are often due to the physical conditions of the deeper waters.

During July and August, 1912, the schooner *Grampus* was employed in an investigation of the oceanography of the Gulf of Maine, with the purpose of determining the physical and biological conditions governing the distribution of fish food and young fishes. The work was supplemented during the winter and spring by observations off the coast in the vicinity of Gloucester and on Georges Banks in connection with the trawl investigations.

Terrapin culture at Beaufort reached a stage which justified the Bureau in issuing a circular descriptive of its methods and commending it as promising financial returns to persons undertaking it on a business scale. Considerable interest has been manifested in the project, and commercial experiments are being conducted under private auspices in North Carolina and Florida.

During the year considerable progress has been made in the accumulation of material toward a series of publications on the life histories of important food fishes and other valuable aquatic animals. This necessarily is slow work, as much of the data is collected in connection with other investigations.

The marine laboratories at Woods Hole, Mass., and Beaufort, N. C., were opened at the beginning of the fiscal year, but were operated with considerable embarrassment, owing to the inadequacy of the appropriations made available pending the passage of the sundry civil bill. The months of June, July, August, and the first half of September comprise the period of greatest activity in scientific field and laboratory work, owing not only to the clemency of the weather and the greater opportunities afforded for study but also to the availability at that time of a considerable number of qualified investigators who are occupied in university work at other seasons.

At the close of the year the permanent laboratory at Fairport station was ready for occupancy. This station, which combines facilities for fish culture, mussel culture, practical shell testing, and biological and chemical investigations and experiments, is designed as a center of a large part of the Bureau's activities in the Mississippi Valley.

COMMERCIAL FISHERIES.

Oyster industry.—The canvass of the oyster industry which was begun in 1910 was concluded during the year by the completion of the statistics of Maryland and Virginia and the States of the Pacific coast. Maryland ranks first in the number of persons engaged in the industry, which in 1912 was 24,287, who received \$2,724,641 in wages. The yield of oysters was 5,510,421 bushels. But 280,010 bushels, valued at \$149,069, came from planted grounds, the recent legislation for the encouragement of oyster culture not having been operative for a sufficient period to have its effects shown in the yield. The application for leases under this law encourages the belief that the State may before long regain her proper place as an oyster producer. Her status, so far as the employment of labor is concerned, is conditioned by the magnitude of her wholesale trade, which was valued at \$4,640,173, and the use of hand apparatus only in taking oysters.

Virginia in 1912 had 16,487 persons engaged in the industry and the wages paid amounted to \$2,112,170; 6,206,098 bushels of oysters were produced, and 36 per cent of the quantity and 50 per cent of the value were yielded by the planted beds. The wholesale trade of the State was valued at \$2,653,590.

On the Pacific coast the industry appears to be in a depressed condition, and there has been a heavy decrease in both the quantity and

quality of the product during the past 10 years. In California the entire product is derived from planted beds, and in 1912 it comprised 68,037 bushels, valued at \$280,344, of which all but 600 bushels were eastern oysters grown from seed or young transplanted from the Atlantic coast. There is also a growing trade in eastern oysters brought into the State for direct consumption. In Oregon the oyster fishery is negligible, but in Washington in 1912 it produced 143,329 bushels, valued at \$386,849. Of these all but 55,736 bushels of native seed oysters, valued at \$14,813, were grown on private beds, and most of the value was contributed by the native oyster.

With the completion of these canvasses it is possible to furnish statistics of the oyster industry as a whole by combining the sectional data for the different years. The total number of persons engaged in the oyster industry of the entire United States was 67,257, with yearly wages amounting to \$10,876,801, and the capital invested, excluding the value of the private beds, was \$16,880,032. The yield of oysters was 32,988,815 bushels, valued at \$15,377,983, about 46 per cent of the quantity and 65 per cent of the value being the product of private planted beds. In the New England States 93 per cent, in New York 86 per cent, and on the Pacific coast 73 per cent of the product are derived from planted beds, and the relative value of the oysters per bushel increases with the increased importance of planting.

Virginia produces more oysters than any other State, but New York, most of whose natural beds are practically extinct, ranks first in value of its product. Maryland, which has the greatest area of natural beds, occupies second place as to quantity and third as to value, her position being due to the practical nonexistence as yet of oyster culture within her borders.

New England vessel fisheries.—The usual statistics of the vessel fisheries on the high seas conducted out of Boston and Gloucester, Mass., were collated and published as timely monthly and annual bulletins. In 1912 there were landed at Boston 3,676 fares of fish, aggregating 100,300,080 pounds and valued at \$2,731,391, and at Gloucester 3,973 fares, weighing 82,403,979 pounds and valued at \$2,047,868. The receipts at Boston were all fresh fish, with the exception of 143,000 pounds of salt mackerel, valued at \$9,442, and those at Gloucester consisted of 51,263,695 pounds of fresh fish, with a value of \$1,055,295, and 31,140,284 pounds of salted fish, valued at \$992,573. The total receipts at both ports were 7,649 fares, of 182,704,059 pounds, valued at \$4,779,259. Compared with 1911 there was an increase of 849 fares, but a decrease of 2,449,308 pounds in the quantity and \$245,238 in the value of the catch. Sixty-eight per cent of the quantity and 64 per cent of the value yielded by the vessel fisheries of the two ports were from the fishing grounds ad-

jacent to the coast of the United States; 12 per cent each of the quantity and value were derived from grounds off Newfoundland; 20 per cent of the weight and 23 per cent of the value were yielded by the grounds off the Canadian Provinces, and less than 1 per cent of the quantity and a little over 1 per cent of the value resulted from the fishery on the coasts of Greenland and Labrador.

There were produced 53,705,128 pounds of cod, valued at \$1,674,033; 63,547,230 pounds of haddock, valued at \$1,337,326; 15,889,952 pounds of herring, valued at \$353,032; 3,541,539 pounds of halibut, valued at \$347,250; 4,208,240 pounds of mackerel, valued at \$268,338; 15,558,431 pounds of hake, valued at \$255,053, and 14,666,662 pounds of pollock, valued at \$243,126. The remainder consisted of cusk, swordfish, and miscellaneous species.

The product of the mackerel fishery in 1912 was 31,861 barrels fresh and 8,267 barrels salted, against 43,541 and 6,633 barrels, respectively, in the previous year. The quantity landed at Boston was 2,496,620 pounds of fresh fish, valued at \$148,496, and 143,000 pounds salted, valued at \$9,442, and at Gloucester 163,620 pounds fresh and 1,405,000 pounds salted, the values being \$9,390 and \$101,010, respectively. In 1913 the catch of fresh mackerel to July 1 was 22,837 barrels, about double that of the preceding year, and 1,523 barrels of salt mackerel were taken to that date. Mackerel were scarce on the southern grounds in the spring, but the fishery on the Cape shore was successful, notwithstanding that the fleet was late in arriving on the grounds.

The herring fishery on the Newfoundland shore in 1912-13 was prosecuted by 42 vessels, of which 6 made two trips. The fish were obtained at Bay of Islands and Bonne Bay and consisted of 47,184 barrels salted and 10,609 barrels frozen, a total of 13,163,776 pounds.

The otter-trawl fishery out of Boston, which is conducted by a single company, has been under investigation by the Bureau in consequence of the opposition which it has excited among the line-trawl fishermen and others interested in the fisheries, and the information acquired will be the subject of a special report. The fishery during the fiscal year employed regularly 6 steamers and occasionally 7. Since July 1, 1913, three new steamers have been added to the fleet. During the calendar year 1912 these vessels landed at Boston over 16,000,000 pounds of fish, of which 14,000,000 pounds were haddock. The fishery is confined chiefly to Georges Bank and adjacent grounds, but in March, 1913, for the first time since the inception of the fishery, it was necessary to resort elsewhere, owing to the scarcity of fish, and several trips were made to Western Bank.

About 1910 an innovation was introduced in the Gloucester, Mass., fisheries by employing for the capture of haddock, cod, and pollock the type of vessels and gill nets employed on the Great Lakes. The

results were satisfactory, and in 1911 about 20 vessels were employed; in the fiscal year 1913 the fleet had increased to 38 vessels. The nets differ in details from those formerly, and to some extent at present, employed in the cod fishery, and instead of being fished from dories are set and hauled by the vessels, which are driven by gasoline or other engines, thus permitting the fishing of strings averaging in length between $2\frac{1}{2}$ and 3 miles. The fishery of late has been carried on principally on banks between 8 and 12 miles from shore, although in preceding years it was prosecuted nearer the coast.

Pacific coast fisheries.—The salmon fisheries of the Pacific coast were prosperous in 1912, but the pack as a whole, notwithstanding an increase in Alaska, fell short of that of the preceding year. The purse-seine salmon fishery in the Puget Sound region employed 170 boats, compared with 136 in the preceding year. The halibut catch was approximately 35,000,000 pounds, about the same as in the preceding year, but it was marketed at higher prices. The cod fishery was carried on by 7 firms, employing 13 vessels, of which 8 sailed from San Francisco and 5 from Puget Sound ports. The catch for the year was about 9,300,000 pounds.

ALASKA FISHERIES AND FUR RESOURCES.

Owing to the season at which the fisheries of Alaska are conducted and the difficulty of communication, complete returns are not obtainable until late in the fall and it is necessary, therefore, to present data for the calendar year 1912 and not for the fiscal year ended June 30, 1913.

Alaska Salmon Service.—There has been the usual inspection of fishing grounds, apparatus, and methods, and so far as could be determined by the field agents of the Bureau the fishery laws and regulations have been generally well received and respected, although the territory is so vast, communication so difficult, and the agents so few that many regions were not visited.

Under authority of the order of the Secretary, dated March 21, 1912, permitting restricted fishing in reserved waters by natives of Afognak Reservation, 93 permits were issued. The eruption of Katmai Volcano, to which reference has already been made, interfered with the fishery, and but 175,000 salmon were taken, including 17,000 handled at the hatchery.

There was an unusually heavy run of salmon on the south side of Bristol Bay, and the pack was 40 per cent greater than in 1911. In central Alaska and Bering Sea the run of humpback salmon was large, but there was a falling off in southeast Alaska. In the latter locality the run of red salmon was about normal, but in the Nushagak region and in central Alaska there was a shortage, resulting in an increased pack of inferior species; 16,963,000 more salmon were caught in 1912 than in 1911 and the value of the product in-

creased more than \$2,000,000. The total catch of salmon was 60,938,945, from which were prepared 4,056,021 cases of canned fish, valued at \$16,295,490, in addition to minor products to the value of \$837,652. The canneries numbered 87, compared with 64 in the preceding year.

In 1912 the Government and private hatcheries took 167,109,470 red-salmon eggs, a decrease of 102,557,330 (most of it in the private hatcheries) compared with 1911. Under the provision of law exempting from taxation the output of salmon canneries which maintain hatcheries, at the rate of 10 cases of salmon for each 1,000 red or king salmon fry liberated, the tax rebates allowed amounted to \$61,744.

The salmon ascending Wood River to spawn were again counted, the results, compared with those of 1908, showing a serious condition, the catch in the Nushagak region during the five-year interval having decreased 37 per cent, while the number escaping to the spawning beds fell off 87 per cent.

Other fisheries and their development.—The usual statistical canvass of the Alaska fisheries as a whole showed that 24,263 persons were engaged, the investment was \$38,263,457, and the products were valued at \$18,877,480.

There is a growing appreciation of the value of marine products formerly regarded as useless, and a number of small plants have been established to utilize them. As yet, however, but a small part of the available aquatic plants and animals have been used, notwithstanding that many of them possess high economic value. Their qualities are unknown to the public, methods of preparation are yet to be developed, and markets for them remain to be established. That these potential resources may be made known and developed it is urgently needed that there be established on the Alaska coast a properly equipped station for purposes of experiment and investigation.

Fur-Seal Service.—The treaty making pelagic sealing unlawful went into effect December 15, 1911, and the season of 1912 was the first for many years in which the seal herd has not been subject to the ravages of pelagic sealers. It is estimated that this resulted in the increase of the herd by about 30,000 seals above the number which would have been on the islands had the destruction at sea continued. A census of the herd made in 1912, under conditions which for the first time permitted an actual count of the majority of the animals, showed that there were about 215,940 seals of all classes. A census made in the summer of 1913 after the close of the fiscal year showed 268,305 seals of all classes.^a

^a The Department is informed that a separate census, taken during the summer of 1913 by representatives of the Committee on Expenditures in the Department of Commerce of the House of Representatives, sent to the Pribilof Islands for that purpose, showed 190,950 seals of all kinds.

I have limited to 3,000 the number of seals to be killed during the calendar year 1913 for the food of the natives on the Pribilof Islands. It is probable that a smaller number will suffice.

The sealing operations on the Pribilof Islands during the season of 1912 were again under the direct control of the Bureau's agents. There were sold at auction in London, January 17, 1913, by Messrs. C. M. Lampson & Co., as agents for the Government, 2,880 skins from St. Paul Island and 884 from St. George Island, together with 9 of the previous season which had been sent to Washington for experiment, a total of 3,773 skins. The net proceeds which were covered into the Treasury were \$130,640.57. Under the leasing system in force prior to 1910 the Government would have received but \$38,589.25 for these skins.

Minor fur-bearing animals.—The take of fox pelts on the Pribilof Islands during the winter of 1911-12 consisted of 384 blue and 29 white skins, which were sold on behalf of the Government, in London, March 7, 1913, for \$20,505.17, after the deduction of commissions and other charges. One choice lot of 28 skins from St. Paul Island sold for \$131 each. Under the leasing system the Government received nothing for fox skins.

A warden and four deputy wardens established headquarters in the more important fur-producing regions of the mainland of Alaska and were thus not only able to enforce the regulations but to secure specimens and much information relating to the habits of the fur-bearing animals, valuable in bringing the regulations into stricter accord with requirements. These studies resulted in a revision of the regulations, approved by the Department March 26, 1913, the principal changes being (1) the extension of the close season on beavers to November 1, 1918; (2) minor changes in the close seasons for several other fur bearers; (3) the removal of the close season on the black bear, and (4) prohibition of taking or selling unprime skins.

The cooperation established with the governor of Alaska, whereby five of the Alaska game wardens have been appointed special fur wardens in return for the aid rendered by the Bureau's wardens in enforcing the game laws, has continued to operate satisfactorily and for the improvement of the protection accorded fur-bearing animals.

In the early part of 1913 it became impracticable for the governor of Alaska to continue the Bureau's agents as game wardens, but certain of the Territorial wardens continue to enforce the fur laws under an arrangement by which they receive a nominal salary of \$10 per month. During the year three convictions were obtained, but the regulations are generally observed and have already caused an improvement in the quality of the skins shipped from Alaska.

A number of permits have been issued authorizing the taking and shipping of various fur-bearing animals, principally foxes, for breed-

ing purposes. Applications for permits for such operations became so frequent as to cause concern in regard to the maintenance of the natural supply of wild stock. The Department decided to issue further permits for the shipment of foxes from Alaska only to bona fide owners or operators of fox ranches and to make such permits applicable only to foxes which had been bred and reared on those ranches. It was also decided to discontinue the issuance of permits authorizing the capture in Alaska of any fur-bearing animal during the close season prescribed for the species concerned. I have also determined to lease for fox raising, to the highest responsible bidders, certain islands in Alaska, and further to encourage the industry, the Department will furnish, under competitive bids, a limited number of breeding foxes from the Government herds on the Pribilof Islands.

MISCELLANEOUS ACTIVITIES AND RELATIONS OF THE BUREAU.

The Bureau has continued its cooperation with the Department of Agriculture in identifying and examining samples of foreign and domestic fishery products and in other ways furnishing information and advice to the food and drugs board.

During the year 5,610,000 eggs were shipped to foreign countries in response to official requests. Of these 5,000,000 were whitefish sent to British Columbia, 150,000 brook trout and 100,000 steel-head trout to Canada, and the remainder were rainbow trout shipped to Germany, India, and Japan.

A fisheries intelligence service was established at Seattle, Wash., during the year, but owing to the difficulty in securing a competent local agent it has not been as useful as was anticipated.

During the year sworn admissions of breach of the act of June 20, 1906, for the protection of the sponge fisheries were obtained from the masters of a number of sponge diving vessels, who were held for trial and the vessels libeled. They entered bond and were released, and immediately proceeded to the sponge grounds and repeated the offense. The cases have not yet come to trial and the terms of the law are such that no further arrests or seizures can be made unless the offenders again furnish evidence against themselves. As previously recommended, the act should be either amended or repealed, as in its present unenforceable terms it fosters contempt for the law.

In view of the conditions mentioned in the preceding paragraph the Bureau, on request, prepared a bill designed to correct the defects of the present law. This bill was introduced in the Senate and passed early in the fiscal year. When it reached the House, however, opposition to some of its features developed among those interested

in the sponge industry and a hearing was held before the Committee on Merchant Marine and Fisheries. No action has been taken by that committee.

Bills providing for the establishment of fish-cultural stations in many parts of the country were introduced in Congress and considered in committee. One in Utah and one in Rhode Island were acted on favorably, and \$25,000 was appropriated toward the construction of each.

An act to give effect to the convention between the Governments of the United States, Great Britain, Japan, and Russia for preservation and protection of the fur seals and sea otter which frequent the waters of the North Pacific Ocean, concluded in Washington, July 7, 1911, passed Congress and was approved August 24, 1912. By this act all killing of fur seals on the Pribilof Islands (except for food of natives) is suspended for a period of five years.

The act to create a legislative assembly in the Territory of Alaska, approved August 24, 1912, particularly excepted authority for the legislature of Alaska to alter, amend, modify, or repeal any laws of the United States applicable to Alaska relative to fish, game, fur seal, or fur-bearing animals.

The Bureau participated in the work of the Permanent International Council for the Exploration of the Sea, and was represented at the annual meeting of the council at Copenhagen in September, 1912. Plans have been made for cooperative investigations of the North Atlantic Ocean in the interests of the fishing industry of both Europe and America.

BUREAU OF LIGHTHOUSES.

ORGANIZATION.

The United States Lighthouse Service is charged with the establishment and maintenance of aids to navigation, and with all equipment and work incident thereto, on the sea and lake coasts of the United States, on the rivers of the United States, and on the coasts of all other territory under the jurisdiction of the United States with the exception of the Philippine Islands and Panama. The jurisdiction of the Lighthouse Service over rivers not included in tidewater navigation is restricted to such as are specifically authorized by law; these now include practically all the important navigable rivers and lakes of the country.

All the work of establishing and maintaining the aids to navigation under the jurisdiction of the Lighthouse Service is performed directly by the Service through the district organizations, with the exception of a few minor aids which are maintained by contract and with the exception of the American Samoan Islands and Guantanamo

Bay, Cuba, where the aids are maintained through the local authorities. The Lighthouse Service also has supervision over the establishment and maintenance of private aids to navigation.

The office in Washington, which is the executive center of the Service, is under the Commissioner of Lighthouses and the Deputy Commissioner. There are in this office an engineering construction division, under the Chief Constructing Engineer; a naval construction division, under the Superintendent of Naval Construction; a hydrographic division, under an assistant engineer, and the general office force, under the chief clerk.

The Service outside of Washington is divided into 19 lighthouse districts, each of which is under the charge of a lighthouse inspector. In each district there is a central office at a location selected on account of either its maritime importance or its geographical position, and there are also one or more lighthouse depots located conveniently for carrying on the work of the district in the matter of storing and distributing supplies and apparatus. Each district is provided with one or more lighthouse tenders for the purpose of distributing supplies to the various stations and light vessels and for transporting materials for construction or repair, for the placing and care of the buoyage system in the district, and for transporting the inspector and other officers of the Service on official inspections of stations and vessels and on other official duty.

In addition to the several district depots, there is in the third lighthouse district, on Staten Island, New York Harbor, a general lighthouse depot, where many of the supplies for the whole Service are purchased and stored and sent out for distribution, where much of the special apparatus of the Service is manufactured or repaired, and where also there is carried on various technical work in the way of testing apparatus and supplies and designing or improving apparatus.

On June 30, 1913, there were 5,536 persons employed in the Lighthouse Service, including 86 in the technical force, 146 in the clerical and office force, and 5,304 employees connected with depots, light-houses, and vessels.

ADMINISTRATION METHODS AND ECONOMIES.

During the year systematic inspections have been continued in the various lighthouse districts by the general inspector as respects the technical work and vessels and by the examiner as to business methods, property accounts, and clerical organization. The effects of this work have been of great value in maintaining the vessels and other equipment of the Service to a proper standard, systematizing methods in the district organizations, auditing district property accounts, and examining records.

The standard method of cost keeping has been continued throughout the year, and reports have been received which indicate itemized costs of various depots or aids to navigation, as well as office and other overhead expenses. This information will continue to be of increasing value as it is compiled from year to year.

Further improvements have been made in the publication of light and buoy lists during the year, the light lists being designed for the general use of navigators and the buoy lists being for local and service use.

A special disbursing agent has been appointed in each lighthouse district in order to insure expeditious payment to creditors of the Service, with satisfactory results.

Under authority of the act of June 27, 1912, an arrangement was made with the Navy Department for the purchase of crews' uniform clothing from naval stores by this Department, to be sold to the employees of the Lighthouse Service, and the appropriations reimbursed as provided for by law.

In making requisitions on the general depot for supplies and other articles needed in the Service a new method of charging the amount of such requisition to the district making the request, accompanied by an automatic transfer of funds, has been put into operation. The former practice was to provide the general depot with sufficient funds to meet all requests and not to charge the cost to the districts making such requests, which in some cases resulted in larger requisitions being made than were immediately necessary, and it is believed that a considerable economy has been effected by the establishment of this new method.

Commutation of subsistence on lighthouse vessels, authorized by the act of August 24, 1912, was put into effect on a number of tenders shortly after the passage of the act, and has proven successful in reducing office work in the preparation of proposals and other papers for subsistence supplies. It has also been conducive to the comfort and satisfaction of the complements of vessels. It is now being extended to light vessels under proper restrictions as to reserve provisions.

A new schedule of complements and rates of pay for officers and crews of light vessels was put into effect during the year. This was a part of the general reorganization of the Lighthouse Service contemplated by the act of June 17, 1910, and has had the effect of standardizing the pay scale for different types of vessels and stations.

Revision was made of the schedule of officers of tenders, under which there were authorized 16 second officers and 9 second assistant engineers for certain tenders where the needs of the Service require a licensed officer who may be placed in charge of the vessel or its machinery, 4 positions each of cadet officer and cadet engineer for

the Atlantic coast and Lake districts, and 1 position each of cadet officer and cadet engineer for the Pacific coast districts. These positions are in the Lighthouse Service at large, in order that these cadet officers and cadet engineers may be transferred as their services may be required, thus giving young men who enter the Service in these positions a varied experience in lighthouse-vessel work and fitting them for more responsible duties.

The Department has submitted for the consideration of Congress an estimate to increase the appropriation for salaries, lighthouse vessels, in order that more adequate pay may be given to the crews of lighthouse vessels. There has been increasing difficulty in obtaining competent seamen and others of crews for such vessels in recent years, and as a result lighthouse tenders engaged in important buoy work during the past season have not been able in some cases to maintain full crews or have had their crews made up largely of inexperienced men. This condition is believed to be due to the fact that the pay of these crews, and particularly of the seamen, has not been increased for a number of years, whereas pay in other Government services and in the merchant marine generally has been raised. For instance, the pay of seamen in the Revenue-Cutter Service on the Atlantic coast was increased by 20 per cent five years ago and is now that much higher than the similar pay in the Lighthouse Service, and, in addition, such seamen receive an allowance for uniforms and for reenlistment. The work of seamen on tenders of the Lighthouse Service is unusually severe, and thoroughly competent men are required to render these vessels efficient on the important work in which they are engaged.

New regulations for shore liberty and annual leave for keepers of light stations and officers and crews of light vessels were put into effect during the fiscal year. These provide for a maximum of shore liberty and leave of 72 days a year for keepers and 90 days a year for crews of light vessels. Regulations providing for leave of absence for crews of tenders were also issued.

Authority has been granted to allow to members of crews who are sick in hospitals, and who have served on a lighthouse vessel for at least one year preceding the date of entrance into the hospital, pay for not exceeding 60 days of the confinement in hospital, provided such members of crews return to duty and serve for two months or more thereafter.

New log books for vessels were issued which provide for recording the necessary information in a more systematic and compact form.

Regulations providing for a systematic method of advertising proposals for furnishing materials, services, or supplies, through newspapers and otherwise, were issued during the year.

A drawing showing the various types of buoys used by the Lighthouse Service was issued, for the assistance of officers of lighthouse tenders charged with the work of relieving and establishing such aids.

Instructions for the operation of different types of gas buoys were issued.

Inspectors are required to report annually the description and condition of all spare property or equipment on hand in their districts. These reports are then consolidated and distributed to the various districts in order that an economical exchange or transfer of such equipment not needed by one district but perhaps by another may be effected.

The application of the parcel-post law to the Lighthouse Service has considerably facilitated the shipping of various small articles required from time to time at stations and on vessels.

Cards giving general rules as to the admission of visitors have been printed for posting at light stations. The keeper of the Absecon Light Station, at Atlantic City, N. J., reported that during the three months ended September 30, 1912, 10,339 visitors registered at the station. This station is visited probably more than any other light station in the United States.

During the year an inquiry was made concerning the extent, accessibility, and historical nature and value of all archives of the Lighthouse Service up to the year 1873.

New civil-service regulations for the Lighthouse Service were published.

There were issued new regulations prescribing uniforms for officers and crews of vessels of the Lighthouse Service.

COOPERATION.

Special effort has been continued to consult the needs of maritime interests as to aids to navigation and to cooperate with other branches of the Government having interest in or relations with the work of this Service.

Cooperation with the engineer officers in charge of river improvements in the river districts has been continued, and has proven particularly advantageous in the prompt change of aids when needed by engineer vessels in the vicinity, making it unnecessary to await the arrival of the lighthouse tender. Altered channel conditions and the adjustment of aids at the opening of navigation in the spring are thereby handled more expeditiously than in former years.

Arrangements were made with the Navy Department and the Revenue-Cutter Service for making prompt report directly to the nearest lighthouse inspector concerned of any deficiencies observed in aids to navigation.

A joint regulation approved by the War Department and the Department of Commerce providing for the marking of wrecks and making arrangements for the removal of same was issued. Arrangements were also made for general cooperation with the Revenue-Cutter Service and the Office of the Chief of Engineers, War Department, for the removal of wrecks, derelicts, and other obstructions to navigation. The commanding officers of revenue cutters will promptly notify the nearest lighthouse inspector whenever wrecks are buoyed or lighted by vessels of the Revenue-Cutter Service, in order that such information may be published in the weekly Notice to Mariners.

LEGISLATION AFFECTING THE LIGHTHOUSE SERVICE.

In addition to the maintenance appropriations for the current fiscal year, appropriations for the following special works have been made since the close of the year: Depot for the sixth lighthouse district, \$125,000; aids to navigation in Atchafalaya Entrance Channel, La., \$50,000; light vessel for the Southwest Pass Entrance to the Mississippi River, La., \$125,000; light station on Navassa Island, West Indies, \$125,000; improvement of aids to navigation at Ashtabula Harbor, Ohio, \$45,000; improvement of fog-signal station at Cleveland, Ohio, \$17,600; light and fog-signal station and improvement of aids to navigation at Lorain Harbor, Ohio, \$35,000; aids to navigation at Ashland, Wis., \$25,000; pierhead light and lighted buoy at Oconto Harbor, Wis., \$5,000; aids to navigation in Manistique Harbor, Mich., \$20,000; light and fog signal at or near Cape St. Elias, Alaska, \$115,000; aids to navigation and improvement of existing aids in Puget Sound and adjacent waters, Wash., \$30,000; improvement of Warrior Rock Light Station, Oreg., \$2,000; completion of unfinished portion of Government road from Rollerville to the Point Arena Lighthouse, Cal., \$3,000.

The following works were authorized at the limits of cost specified, no appropriations being made: Lighthouse tender for general service, \$250,000; light vessel to be placed near Monhegan Island, Me., \$125,000; carpenter shop at the general lighthouse depot, Tompkinsville, N. Y., \$23,000; light and fog-signal station at or near North Farallon Island, Cal., \$100,000.

The use of the unexpended balance of the appropriation of \$15,000 heretofore made for a light and fog-signal station at or near the west end of the draw near the Lehigh Valley Railroad bridge at Passaic, N. J., for establishing beacon lights to mark the channel in Newark Bay, N. J., was authorized.

The purchase for lighthouse purposes of approximately one-half acre of land in the vicinity of the lighthouse reservation at Port

Ferro Light Station, P. R., for the purpose of constructing a watershed and cistern, and making the appropriation "General expenses, Lighthouse Service," for the fiscal year in which the purchase is effected available therefor, was authorized.

The purchase of necessary additional land for light stations and depots, under rules prescribed by the Secretary of Commerce, was authorized, no single acquisition of such additional land to cost in excess of \$500. Authority was later given for the payment for such land to be made from the appropriation "General expenses, Lighthouse Service," and the total sum to be expended for this purpose in any fiscal year restricted to \$3,000.

Authority was granted for the furnishing of supplies and equipment for special works of the Lighthouse Service from general stock, and the reimbursement of the appropriation "General expenses, Lighthouse Service," from the respective appropriations for special works.

Authority was granted for the appraisal and sale, either by sealed proposals for the purchase of the same or by public auction, after advertisement of the sale for such time as in the judgment of the Secretary of Commerce the public interests require, of any condemned supplies, materials, equipment, or land which can not be profitably used in the work of the Lighthouse Service, the proceeds of such sales, after the payment therefrom of the expenses of making the sales, to be deposited and covered into the Treasury as miscellaneous receipts, as now provided by law in like cases.

Authority was granted for the payment of \$1,642.55 to the officers and crew of the tender *Manzanita* for personal-property losses sustained by them on the foundering of that tender on October 6, 1905.

Authority was given to pay a claim in the sum of \$22.50 for damages occasioned by a collision for which a vessel of the Lighthouse Service was found to be responsible.

APPROPRIATIONS.

The estimates for maintenance appropriations for the year 1914 were divided into one appropriation for general expenses of supplies, repairs, etc., and three appropriations for salaries, with an alternative providing for all maintenance appropriations in a single item. This alternative proposition was not authorized by Congress. It is believed, however, that with this form of appropriation a more economical and efficient administration of the Lighthouse Service could be effected, and in the estimates for the next fiscal year attention has been drawn to the fact.

Besides the estimates for maintenance, estimates for 29 special works have been submitted aggregating \$1,635,500. These include 3 new lighthouse tenders, 1 new light vessel, 3 new light and fog-

signal stations, 2 new light stations, 1 new lighthouse depot, 5 items for establishing or improving aids in general localities, 1 item for a new system of harbor or channel lights and other aids, 8 items for improvements of light or fog-signal stations or of groups of aids to navigation, 4 items for improvement of lighthouse depots, and 1 item for light keepers' dwellings.

AIDS TO NAVIGATION.

During the fiscal year ended June 30, 1913, there was a net increase of 591 in the total number of aids to navigation maintained by the Lighthouse Service, including 2 light vessels, 56 lights above the order of minor lights, 10 fog signals, 3 submarine bells, 171 daymarks, 51 lighted buoys, 184 unlighted buoys, and 114 minor lights.

Fixed lights were changed to flashing or occulting at 26 stations. The illuminant of 73 lights was changed to incandescent oil vapor, and the illuminant of 30 lights was changed to acetylene. Two new light vessels were established during the year. On June 30, 1913, there were maintained by the Lighthouse Service 13,434 aids to navigation, including 4,739 lights of all classes and 566 fog signals, of which 46 are submarine signals.

Following are some of the more important aids which have been established or materially improved during the past fiscal year:

Second order incandescent oil-vapor light established: Kilauea Point, Kauai Island, Hawaii, about 250,000 candlepower.

Fourth order incandescent oil-vapor lights established: Miah Maull Shoal, N. J.; San Pedro Breakwater, Cal.; Alki Point, Wash.; Superior Entry South Breakwater, Wis.

New light vessels placed on station: Milwaukee *No. 95*, Wis.; Buffalo *No. 96*, N. Y.

South Pass Light Vessel *No. 43*, La.: Moved to Southwest Pass, Mississippi River.

Bush Bluff Light Vessel *No. 97*, Va.: Changed to flashing electric light.

First-class air sirens established: Point Loma, Cal.; San Pedro Breakwater, Cal.

Reed-horn fog signal established: Alki Point, Wash.

Fog bell established: Negro Point, N. Y.

Submarine fog bell established: Off Whitefish Point, Mich.; on Buffalo Light Vessel *No. 96*, entrance to Buffalo Harbor, N. Y.

A gas, whistling and submarine bell buoy was established at Orford Reef, Oreg.

Other important gas buoys established: Block Island North Reef, N. Y. (bell); Chesapeake Bay entrance, Va.; Neah Bay, Wash. (whistle); South Pass, Mississippi River, La. (whistle); Columbia

River entrance, Oreg.-Wash. (2 buoys, 1 with whistle); Joe Flogger Shoal, Delaware Bay, Del. (bell); Boulder Reef, Lake Michigan.

Systems of minor aids and buoyage extensively rearranged or improved in important harbors: Boston Harbor, Mass.; Nantucket Sound, Mass.; Connecticut River, Conn.; Ambrose Channel, N. Y.; Delaware Bay and River, Del., N. J., and Pa.; Baltimore Harbor, Md.; Hampton Roads, Va.; Newport News, Va.; Tybee Roads, Ga.; St. Johns River, Fla.; Key West Harbor, Fla.; Tampa Bay, Fla.; Mobile Bay, Ala.; Sabine Pass, Tex.; Niagara River, N. Y.; Maumee Bay and River, Ohio; Detroit River, Mich.; Columbia River, Oreg.-Wash.

Flashing acetylene lights established: Blank Island, Spanish Island, Sukoi Islets, Cape Fanshaw, Shakan Bay, Key Reef, Lone Tree Point, Point Helen, Busby Island, Seal Island, Point Hugh, Grave Point, Lord Rock, Alaska; Milwaukee South Pierhead, Manitowoc South Breakwater, Wis.; Galveston Bay Channel, Tex.; Reeds Hammock, N. C.; Cape Fear River, N. C. (10 lights); Negro Point, N. Y.; Livingstone Channel, Detroit River, Mich. (6 lights).

The mildness of the past winter has permitted keeping on station many gas buoys which ordinarily are removed during the season of heavy ice. In the Delaware River and Bay, for the first time since gas buoys were established there, half of the gas buoys were maintained on station throughout the winter.

Measures have been taken for improvement in the marking of light-vessel stations for the purpose of lessening the danger of an approaching ship mistaking one light vessel for another. The names of light vessels have been simplified, thus permitting the distinguishing word for the vessel to be painted in larger letters, which can be read at a much greater distance. In every case the important distinguishing word has been retained on the vessel, so that there is no difficulty in the mariner identifying the station. These recent improvements made to avoid danger in confusing relief light vessels consist in assigning code-signal letters to every light-vessel station and having the relief lightship display the code-signal letters of the station to approaching vessels whenever necessary to warn them of the name of the station, and also in having the relief vessel so equipped that at night she can show the identical light of the station ship, and during fog sound the identical fog signal; also the relief vessel will sound the same code number on the submarine bell. To avoid confusion when light vessels are off their stations while proceeding to or from port, all light vessels have been directed, under such circumstances, to show the international code-signal letters "QE," meaning lightship is not at anchor on her station.

The practice has been inaugurated of publishing from time to time special poster notices to mariners for the more important changes in

aids to navigation. It is intended that these notices be displayed in such offices and places as are frequented by mariners, in order to bring important changes prominently to their attention. When practicable six months' advance notice is given of all important changes in seacoast aids, and the notice is repeated in the weekly Notice to Mariners in the first issue of each month until the change is carried into effect. The mailing list for notices is revised from time to time with a view of obtaining the maximum publicity for all changes.

Regulations issued during the year for standard-size buoy letters and numbers have had the effect of producing general uniformity in this system of marking throughout the Service.

Arrangements have been made with the United States naval radio station at Arlington, Va., to send by wireless twice a day to shipping along the Atlantic coast important emergency information regarding aids to navigation.

A board, consisting of engineer officers of the Army and lighthouse inspectors, appointed October 29, 1912, to consider and report upon the most feasible, advantageous, and economical method of providing suitable aids to navigation at or near the extremity of the south jetty at the mouth of the Columbia River, Oreg., recommended a system of buoys and range lights, which have since been established.

ALASKA.

The total number of aids to navigation in Alaska, including lights, fog signals, buoys, and daymarks, in commission at the close of the fiscal year ended June 30, 1913, was 279, including 93 lights, representing an increase of 56 lights since June 30, 1910, or 150 per cent. The following table, which gives the total number of aids to navigation on June 30 of each year named, illustrates the progress in establishing aids in the Territory:

Aids.	1910	1911	1912	1913
Lights.....	37	71	85	93
Fog signals.....	9	10	10	10
Buoys.....	84	105	132	136
Daymarks.....	30	29	38	40
Total.....	160	215	265	279

The work of rebuilding and improving the present light and fog-signal station at Lincoln Rock, under the special appropriation of \$25,000 made by the act of March 4, 1911, has been completed.

The act approved March 4, 1913, authorized a light and fog-signal station at or near Cape St. Elias, at a cost not to exceed \$115,000, and an appropriation of this amount was made subsequent to the close of the fiscal year.

An estimate for an appropriation of \$325,000 for a new tender to replace the *Armeria* will be included in the Department's estimates for the fiscal year 1915, which will also include an item of \$60,000 for the establishment of aids to navigation and the improvement of existing aids in Alaska.

ENGINEERING AND CONSTRUCTION.

A number of new works under special appropriations were completed during the fiscal year. Those of principal importance are as follows: New fog signal at Manana Island, near Monhegan Island, Me.; wharf, power house, and foundry at the general lighthouse depot, Tompkinsville, N. Y.; new light and fog bell at Negro Point, East River, N. Y.; new lighthouse at Miah Maull Shoal, Delaware Bay, N. J.; a portion of new lights for Cape Fear River, N. C.; new lighthouse and fog signal, with minor lights, at Superior Entry, Wis.; beacon lights and buoys for Livingstone Channel, Detroit River, Mich.; 13 new acetylene lights in Alaska; reconstruction of lighthouse and fog signal at Lincoln Rock, Alaska; new light and fog signal, Alki Point, Puget Sound, Wash.; new lighthouse and fog signal at San Pedro Breakwater, Cal.; new fog signal at Point Loma, Cal.; new lighthouse at Kilauea Point, Hawaiian Islands.

Other important work in progress at the close of the fiscal year includes a new light and fog signal at Thimble Shoal, Chesapeake Bay, Va.; new light and fog signal at Brandywine Shoal, Delaware Bay, N. J.; lights and buoys for channels leading to Baltimore, Md.; general improvements at San Juan Depot, P. R.; new light and fog signal at Buffalo Breakwater North End, N. Y.; and new system of lights (43 in all) for St. Marys River, Mich.

The most noteworthy example of construction accomplished during the fiscal year was the construction of foundations for 10 beacon lights marking the Livingstone Channel, Detroit River, Mich. The concrete foundations of 6 of the beacon lights were constructed in place in the cofferdam built by the engineer officers for the purpose of taking out the principal rock cut, thus avoiding the heavy expense which would have been incurred had it been necessary to place these foundations under water. The remaining four foundations were constructed by building reenforced concrete cribs at a selected point within the cofferdam, afterwards towing them downstream to their proper positions, sinking them by means of sluice valves provided for the purpose, then pumping out the water from the interior of the cribs and filling them with concrete. This also proved to be an economical method of construction. Iron ice guards around the water line are provided for all concrete foundations. Acetylene illumination was provided for the beacon lights.

A new type of cast-iron mast supporting a cylindrical tank shelter, surmounted by an acetylene lantern, has been developed and installed in exposed positions on breakwaters which in times of storm are swept by the sea to a depth of 10 feet. The structures have withstood this test and have given general satisfaction.

Old wooden beacons have been replaced by concrete structures, which have been found superior in resisting ice damage. In one case, where in former years the old wooden rock-filled crib was overturned by ice every winter, a concrete structure has now stood without damage for two years.

Some experimenting and work was done with oil concrete—Portland cement concrete with addition of a paraffin base residue mineral oil—and the results have so far been satisfactory in preventing leakage or absorption.

A tripod beacon was built of reenforced concrete in place of wood, and work on another was nearly completed. A much more durable and permanent construction has been effected, and other beacons of this type will be built in the future.

To lessen possible damage from fire at light stations a number of isolated oil houses have been built during the year for the storage of inflammable supplies.

A standard legend to be placed on all drawings, tracings, and blue prints made throughout the Service was developed during the year. Standard photolithograph drawings and instructions covering various types of incandescent oil-vapor lamps were issued during the year, to be placed in a proper place for ready reference by keepers and other employees charged with the use of same.

Arrangements were made to provide each district office with a small collection of modern technical reference books for use in designing and other engineering work of the Service.

IMPROVEMENT OF APPARATUS.

Until lately it has been necessary to procure all the cut glass lenses used in the Lighthouse Service from either France, England, or Germany, most of them coming from France. Recently the matter was taken up with an American firm of glass manufacturers with a view to ascertaining if a better lens could not be made in this country than abroad by using some modern manufacturing methods. The results to date have proven satisfactory. The lenses are superior to those purchased abroad and can be made for the same cost or less. The essential feature of the American method of manufacture is that the prisms are formed by machines instead of by hand. Every part is made to fit an accurate template or jig, so that they are true to size and parts of the same number are completely interchangeable. It is hoped that in a short time American factories will be equipped

to furnish all lenses except those of large size, for which the demand is too small to warrant the large equipment cost necessary.

Improvements have been made in pressed glass lens lantern and buoy lantern lenses, and tests show them well adapted for many conditions of the Service, at a decrease in expense.

Efforts with a view to the standardization of articles manufactured at the general lighthouse depot, Tompkinsville, N. Y., were continued. Practically all articles manufactured at that depot are now made from jigs and templates, so that all parts are duplicate and interchangeable. The making of proper tools and installation of modern machinery is still in progress, and it is expected to reduce costs of manufacture further.

Wick lamps have been gradually replaced by incandescent oil-vapor installations at a number of important stations, thereby producing a much brighter and more efficient light, which has proven satisfactory to mariners and elicited favorable comments from them.

A device to call the attention of the keeper to any abnormal condition of his light has been prepared and fitted to a third-order vapor lamp. It consists of a recording thermometer with electrical connections to ring alarm bells where required when the light burns either too low or too high, and also keeps a chart record showing the operation of the light. Its use tends to greater attention on the part of keepers to insure uniform illumination. Other devices designed for the purpose of summoning the light keeper in case his light is not burning properly are being tried.

Experiments have been made with new types of post lanterns, and a lantern has been developed which it is believed will be an improvement.

Experiments have been made for the improvement of lens clocks or revolving apparatus, and a clock that is believed to be superior is being manufactured.

The use of devices to prevent birds from resting on buoys and discoloring them was extended during the year.

An improved type of torch for starting oil engines was designed.

A vapor lamp using three 55-millimeter mantles was developed, for use in first and second order lenses, that gives promise of operating successfully.

Some improvements were made in the construction of single oil-vapor lamps, in the direction of better control and simplification of cleaning operations.

The question of installing acetylene fog guns for trial at several light stations in this Service is under consideration. These fog guns were tried recently by the Scotch Lighthouse Service with apparently satisfactory results.

VESSELS.

Milwaukee Light Vessel *No. 95*, Wis., has been completed and placed on station.

Contract has been awarded for the construction of light vessels *No. 96* and *No. 98*, the former to be stationed about 13 miles southwest from Buffalo Harbor North Entrance and the latter to be used as a relief vessel on the Great Lakes. Contract has also been awarded since the close of the fiscal year for the single-screw, steam-propelled lighthouse tender *Laurel*, for service in the fifth lighthouse district.

The tender *Woodbine* is still under construction, its completion having been delayed by the failure of the contractor and by delay in the furnishing of the propelling engine. It is expected that the vessel will be ready for service about November, 1913.

Diamond Shoal Light Vessel *No. 71*, N. C., was greatly improved by fitting new boilers, compounding the propelling engine, and replacing one of the steam-driven electric generating sets for the signal light and radio service by an oil-engine outfit of the same capacity. The speed of the vessel has been increased, while the coal consumption has been reduced. A further economy has been effected in the avoidance of the dangerous labor of frequently coaling the vessel at sea, as well as in a saving of the time of the tenders and the labor of their crews, as oil is safely and quickly delivered.

Bush Bluff Light Vessel, Va., has recently been fitted with a new system of electrical signal lights. It consists of one parabolic silvered reflector mounted on a compound pendulum and revolved by an electric motor to show a flash every 10 seconds. The light is furnished by a concentrated Tungsten filament incandescent lamp of 30 candlepower, fixed in the focus of the reflector, and gives a flash estimated at about 80,000 candlepower. The current for the operation of both the lamp and motor is furnished by storage batteries, which are sent ashore for recharging at convenient intervals. This is the first installation of a signal light of this character in the world.

Regulations providing for the standard painting of under-water surfaces of Lighthouse Service vessels were issued after a number of experiments and service trials of various compositions. These regulations cover the various conditions under which these vessels must operate, both in salt and fresh water.

Supplementary to these regulations, instructions were also given for the periodic docking of all vessels at regular intervals, depending on type of vessel and locality of station.

SAVING OF LIFE AND PROPERTY.

During the fiscal year 1913 services in saving of life and property were rendered and acts of heroism performed by employees of the Lighthouse Service on vessels or at stations on 92 occasions.

COAST AND GEODETIC SURVEY.

GEODETIC WORK.

A reconnoissance was made for the extension of the primary triangulation along the ninety-eighth meridian from Alice, Tex., to the Mexican boundary, to connect with the triangulation executed by the Mexican Government. The triangulation of the coast of Louisiana in the vicinity of Cote Blanche and Atchafalaya Bay, and of Laguna Madre, Tex., was revised.

Primary triangulation was extended along the one hundred and fourth meridian from the vicinity of Colorado Springs, Colo., to the Canadian boundary, a distance of 720 miles. A secondary triangulation along the coast of Washington was begun. Precise leveling was completed on the line between San Francisco, Cal., and Brigham, Utah, and was begun on a line between Crookston, Minn., and Butte, Mont.

Determinations were made of the difference of longitude of stations near the one hundred and fourth meridian in Nebraska, Colorado, Wyoming, and Montana.

The geographic positions of numerous aids to navigation and of radio stations along the Atlantic and Pacific coasts were determined.

MAGNETIC WORK.

Observations for magnetic declination, dip, and intensity were made at the magnetic observatories maintained by the Survey at Cheltenham, Md.; Tucson, Ariz.; Vieques, P. R.; Sitka, Alaska, and Honolulu, Hawaii. Seismological and meteorological observations were continued at the observatories and special observations were made in accordance with plans adopted for international cooperation. Magnetic observations were made in the field at a large number of stations in the United States and in the Philippine Islands and meridian lines were established when requested by local authorities.

Magnetic observations at sea and at shore stations were made by vessels engaged in general surveying operations.

HYDROGRAPHIC AND TOPOGRAPHIC WORK.

Atlantic coast.—The steamer *Bache* was engaged in inshore and offshore hydrography between Charleston and Savannah, including St. Andrews and Sapelo Sounds and Tybee and Port Royal entrances, and offshore work between Delaware and Chesapeake Bays. The *Bache* was repaired at Boston between September 26 and October 27.

The steamer *Endeavor* was at work on the hydrography of Chesapeake Bay from Kedges Strait northward; in Narragansett Bay,

R. I.; between Cowpen Island, Core Inlet, and Morehead City. The vessel was repaired at Baltimore between November 20 and January 2 and at Jersey City, N. J., between May 19 and 24 and June 24 and 30.

The steamer *Hydrographer* was employed on coast-pilot revision between Chesapeake Bay and Kest West, and in detached hydrographic surveys on the coast of Massachusetts and on the coast of North Carolina in the region between Cowpen Island, Core Inlet, and Morehead City. Repairs were made to this vessel at Baltimore between December 21 and January 20 and between June 19 and June 30.

The schooner *Matchless* completed a survey of the Pamunkey River, Va., to the head of navigation and began a survey of the southern and eastern branches of Elizabeth River. The *Matchless* was repaired at Baltimore between July 1 and 23 and between June 26 and 30.

Wire-drag work was done in the channel between Block Island, R. I., and Montauk Point, Long Island, N. Y.; in Buzzards Bay, Mass.; at Key West, Fla., and in the vicinity of Matinicus Island, on the coast of Maine.

A resurvey of the Delaware River from House of Correction Wharf to Trenton was completed and a survey of Newark Bay and the Hackensack and Passaic Rivers was begun.

Chart-revision work, including revision of shore-line changes, improvements, and additions, was continued in the vicinity of New York City and on Long Island Sound eastward from Stamford, Conn., and on the coasts of Maine and Massachusetts, and a survey was made of the dredged channel between Greater and Little Peconic Bays, N. Y. Preparations were begun at the close of the year for a series of current observations in the Potomac River.

Data were collected for the preparation of an inside-route pilot from Cape Sable, Fla., to New Orleans, La.

A hydrographic survey of Piscataqua River and Great Bay, N. H., was begun.

An officer of the Survey performed the duties of inspector during the year for the region from Narragansett Bay to Delaware Bay, inclusive. Information was obtained by this officer for chart corrections and notices to mariners, and data relating to charts, tides, and sailing directions were supplied to navigators and others interested. A revision was made of the shore line of Hog Island and portions of Rhode Island and Bristol Island and of the channels in the vicinity of Hog Island Shoal Light, R. I. The supervision of the construction of certain boats for the use of the Survey and of machinery and boilers for the same and the collection of data relating to depths in channels and harbors are among the various duties performed by this officer, whose headquarters are at the New York customhouse.

Pacific coast.—The steamer *Explorer* was employed on the survey of the entrance of the Kuskokwim River, Alaska. The *Explorer* was repaired at Seattle and at the Puget Sound Navy Yard between January 20 and the early part of April, and afterwards a radio apparatus was installed on the vessel.

The party on the steamer *Gedney* was engaged in surveys in Kasook Inlet, Sukkwan Strait, Tlevak Strait, and San Cristoval Channel, Alaska, and in revision work at Tacoma, Olympia, and Seattle, Wash. The vessel was repaired at Winslow, Wash., between February 24 and April 4.

The steamer *McArthur* made hydrographic surveys in Cook Inlet in the vicinity of Aialik Bay and offshore between Aialik and Resurrection Bays; at Nakat Harbor, Burnett Inlet, and Iniskin Bay, Alaska. The *McArthur* was repaired at the Puget Sound Navy Yard between February 19 and April 15.

The steamer *Patterson* was employed in southeastern Alaska on the triangulation and topography of Clarence Strait and on surveys in the vicinity of the Shumagin Islands and Unimak Pass. During the winter the vessel was engaged in hydrographic work around the Island of Maui and off the west end of Molokai Island, Hawaiian Islands. Temperatures of sea water were obtained both in going to Hawaii and in returning. The *Patterson* was repaired at Seattle between July 1 and August 2 and in November and May. In May a radio apparatus was installed on the vessel.

The steamer *Taku* operated in the northwestern part of Prince William Sound between Naked Island and Port Wells and in the north arm of Simpson Bay and thence southward toward Knights Island Passage and westward from previous work on the mainland. The *Taku* was repaired at Cordova, Alaska, between April 2 and May 1.

The steamer *Yukon* was employed on the survey of Turnagain Arm, Cook Inlet, and in the approaches to the Kuskokwim River, Alaska. The *Yukon* was repaired at Seldovia between April 23 and May 10.

Revision work for the correction of charts was done at Blaine, Bellingham, Anacortes, Neah Bay, Port Angeles, Port Townsend, Richmond Beach, and Coupeville, on Puget Sound.

The revision of the triangulation and topography of the Island of Maui was completed and that of the Island of Hawaii was begun. The work was carried from Hilo around the northwest point of the island to Kawaihae.

An officer of the Survey continued in charge of the suboffice at San Francisco, acting as inspector for the coast of California. A resurvey was made under his direction of the United States immigration station on Angel Island, San Francisco Bay.

An officer, acting as inspector for the coasts of Oregon, Washington, and Alaska, stationed at Seattle, in addition to other duties, rendered valuable service in the preparation of specifications for repairs of vessels and of plans for a new launch for the steamer *Pathfinder*, in planning work for vessels in Alaska, and in collecting and furnishing information useful to navigators and for the correction of charts.

TIDES AND CURRENTS.

Tide observations were continued at regular stations maintained at Portland, Me.; Fort Hamilton, N. Y.; Atlantic City, N. J.; Philadelphia, Pa.; Baltimore, Md.; Fernandina, Fla.; Galveston, Tex.; San Diego, Cal.; San Francisco, Cal.; Seattle, Wash., and Juneau, Alaska, and at stations temporarily occupied in connection with hydrographic work. The tidal indicators at Fort Hamilton, N. Y.; New York City, and Reedy Island, Delaware River, were continued in operation.

Current observations were made in various localities by vessels of the Survey, and through cooperation with the Bureau of Lighthouses by observers on light vessels along the Atlantic coast.

SPECIAL SURVEYS.

Many requests were received for special surveys in various localities. Reports of newly reported dangers to navigation were promptly investigated and when verified were made the basis of chart corrections and notices to mariners.

OUTLYING TERRITORY.

An officer of the Survey detailed to duty as director of coast surveys, with headquarters at Manila, has direction of the field work in the Philippine Islands. Excepting the steamer *Pathfinder*, the vessels engaged in that work are the property of the insular government, which provides the crews and keeps the vessels in repair. The salaries of the officers are paid by the Federal Government and the running expenses, including outfit, are divided between the Federal and insular governments.

Congress having made an appropriation for extraordinary repairs to the *Pathfinder*, that vessel was taken to Hongkong in December. The extensive repairs needed were completed by April 8, when the vessel returned to Manila. The *Pathfinder* encountered several typhoons during the year, the most severe of which occurred on October 16, when she was lying at Cebu. Both of her launches were dragged from their moorings and swamped. One was recovered without serious damage; the other was lost.

On November 6 the steamer *Marinduque*, during a typhoon, was driven on shore and seriously damaged, necessitating extensive repairs.

The general localities in which the vessels were employed are as follows: The steamer *Pathfinder* was employed in general surveys on the southeast coast of Mindanao and the southwest coast of Negros; the steamer *Fathomer* was employed on general surveys in the vicinity of the Cuyos Islands and Apo Reef, Busuanga Island, and between the Cuyos Islands and Palawan; the steamer *Marinduque* was engaged in general surveys in Ragay Gulf, southwestern Luzon, on the west coast of Mindanao, and on the west coast of Mindoro; the steamer *Romblon* was at work in the area bounded by Luzon, Burias, Masbate, and Tablas Islands, in the vicinity of the Lubang Islands and the Calamianes Group, and the steamer *Research* made surveys in the area bounded by Samar, Leyte, Biliran, and Masbate Islands.

Tidal observations were made in connection with the work of the hydrographic parties.

Magnetic observations were made at a number of stations in the Philippine Islands.

In the Hawaiian Islands triangulation and topographic and hydrographic surveys were continued, and the usual observations were made at the permanent magnetic observatory maintained by the Coast and Geodetic Survey at Honolulu.

Through the courtesy of the surveyor general of Hawaii tide observations made by the Territorial government are furnished to the Coast and Geodetic Survey.

A permanent magnetic observatory is maintained by the Survey at Vieques, P. R.

INTERNATIONAL BOUNDARIES.

The Superintendent is commissioner on the part of the United States for the survey and demarcation of the boundary line (excepting certain water boundaries) between the United States and Canada and between Alaska and Canada, and the field work is conducted by parties under his direction. The expenses of the work are defrayed from a special appropriation made to the State Department.

United States and Canada boundary.—During the fiscal year the following work was completed:

On the boundary east of the summit of the Rocky Mountains between the Red River of the North and Lake of the Woods 95 miles of topography along the boundary were completed, 82 miles of vista were cut, 102 miles of boundary were located, and 155.5 miles of levels were run. The triangulation was extended along the boundary for a distance of 87 miles, and the triangulation of the Lake of the Woods was completed. A base line was measured at Fort Frances, Ontario.

Seventy-five monuments were set on the boundary. The meridian boundary to its intersection with the southeast boundary was located and marked.

Twenty-five miles of triangulation on the Lake of the Woods were done by a Canadian party, to which an American surveyor was attached, and a hydrographic survey of the lake along the boundary was made.

Between Pigeon River and Lake of the Woods triangulation and topography were completed from Round Lake to a point beyond the western end of Knife Lake, a distance of about $41\frac{1}{2}$ miles.

On the northeastern boundary between Maine and New Brunswick 31.5 miles of boundary were measured, 37 miles of levels were run, and 42.39 square miles of topography were completed. A lane 30 feet in width was cut through the dense forest along this portion of the boundary. In the valley of the St. Croix River 18 square miles of triangulation and 2 square miles of topography were completed and reference marks were placed on Monument Stream.

Alaska boundary.—The line tracing of the one hundred and forty-first meridian boundary was completed from the close of the previous work to the shores of the Arctic Ocean, a distance of 22 miles. The triangulation was carried for a distance of 51 miles to the ocean shore and extended eastward for 25 miles to determine the relation of the terminal monument to the shore line. The topography along the boundary was surveyed for a distance of 49 miles and extended along the ocean shore to include Icy Reef, Beaufort Bay, and Demarcation Point to the west and Clarence Bay to the east. Vista cutting and stadia measurement were also completed, covering a distance along the boundary of 91 miles. Fifty-six monuments were placed on the boundary north of the Porcupine River to the Arctic, covering a distance of 80 miles, and south of the Porcupine, 78 miles.

In the region south of Mount Natazhat the triangulation was carried from Scolai Pass to within 30 miles of the boundary, a distance of 90 miles, and the reconnoissance to within 8 miles of the boundary. The topography was extended from the mouth of Canyon Creek, on the Chitina River, up the valley of the latter to and along the one hundred and forty-first meridian northward toward Mount Natazhat as far up the Anderson Glacier as practicable, including the tops of the ridges on either side, and photographs were taken from which an additional area can be plotted.

PUBLICATIONS.

The publication of charts, coast pilots, and tide tables and of the results of the geodetic, magnetic, tidal, and other work of the Survey was continued. An inside-route pilot, describing the inside passages between New York and Key West, was prepared and pub-

lished, supplying a demand for information along this route which had not before been adequately met.

A revised edition of the Regulations and Instructions for the Government of the Coast and Geodetic Survey was issued during the year.

The publication of the results of surveys of oyster beds in cooperation with the State of Maryland was nearly completed.

The annual report of the Superintendent was, by direction of the Department, published in octavo form and the results and discussions of the work, which had previously appeared as appendixes to the report, were issued as separate publications.

A number of publications were in press or in course of preparation at the close of the year.

SPECIAL DUTY.

An officer detailed for duty with the Maryland Shell Fish Commission continued on duty in charge of office work and the preparation of maps, reports, and publications. Assistance was rendered by the same officer to the Oyster Survey Commission of the State of Delaware without expense to the Federal Government.

Two officers of the Survey were detailed to represent the Department of Commerce at the Conference of Port Authorities. Both of these officers attended the meeting in New York, and one of them also attended the meetings of the conference at Boston, Philadelphia, and Baltimore.

The Superintendent and the inspector of geodetic work, as delegates on the part of the United States, attended the meeting of the International Geodetic Association.

The usual supervision was given to the work of the observatories maintained by the International Geodetic Association for determining the variation of latitude at Gaithersburg, Md., and Ukiah, Cal.

An officer of the Survey, in addition to other duties, continued to act as a member of the Mississippi River Commission.

The Superintendent is chairman of the board appointed by the Secretary of the Treasury to examine and report upon life-saving appliances.

During the winter season a number of officers were engaged in determining the positions of radio stations along the Atlantic and Pacific coasts, as requested by the Bureau of Navigation of the Department of Commerce. A special survey was made of the grounds of the Hygienic Laboratory of the Public Health Service in the District of Columbia.

A special hydrographic examination was begun in the Potomac River to determine the extent of the pollution of water. Hydrographic examinations were made also in the channels of Greater and

Little Peconic Bays, Long Island; of Piscataqua River and Great Bay, N. H.; of the harbor of refuge at Point Judith, R. I., and of the outer and inner harbors at Delaware Breakwater.

ASSISTANCE RENDERED IN SAVING LIFE OR PROPERTY.

On October 7 the steamer *Hydrographer* rendered assistance to a four-masted schooner which had stranded near the Marconi Towers, Cape Cod. The U. S. S. *Cyrus W. Field* and the revenue cutter *Gresham* succeeded in getting the vessel afloat. The *Hydrographer* also assisted the schooner *Sallie Purnell Beswick* while aground in North Landing River, N. C.

Assistance was rendered by the steamer *Gedney* to the Pacific Coast Steamship Co.'s steamer *Curacao*, which ran aground near Fish Egg Island, Alaska. With the aid of the *Gedney* the vessel was on that occasion got afloat, but was afterwards unfortunately wrecked in Tonawek Bay. The *Gedney* at the time of this disaster took off the passengers and crew of the *Curacao* and conveyed them to Ketchikan, the nearest port of call for steamships.

During a severe typhoon in the Philippine Islands on October 15 and 16, a volunteer boat's crew from the steamer *Pathfinder* succeeded at great personal risk in rescuing the crew of a wrecked vessel. The *Pathfinder* also towed to a safe anchorage the steamer *Lizarago*, which was sighted in distress.

The officers of the steamer *Research* aided in extinguishing a fire on a new tugboat in the dock on Engineers Island in Manila Bay.

RECOMMENDATIONS.

Housing conditions.—The buildings occupied by the Bureau are antiquated and not adapted to the efficient and economical conduct of its business. The main building was erected more than forty years ago. It was rented by the Coast Survey in 1871, but was not acquired by the Government until 1891. Part of the buildings are what was formerly a stable, and the walls in some places are in such condition that they have to be shored up to keep them from falling. The land on which the buildings stand belongs to the Government. More suitable and enlarged quarters are urgently needed. Additional facilities are especially necessary for the lithographic and plate-printing establishments.

Chart construction.—On account of the character of the work of the chart-construction division, ample, well-diffused daylight is essential in order to properly deal with the fine details of the charts. The present quarters are inadequate for the growing demands on this department of the work, not only in the respect of light but also as regards heat, ventilation, and proper supervision. The whole building plant is out of date and discreditable to the Government. An

increase in the personnel and equipment is necessary to meet the urgent demand for an increased output of charts. Four additional presses for printing from aluminum plates are needed in the printing section and two additional vats in the electrotyping section.

The total issue of charts for the year was 143,694, an increase of 12,357 over the previous year. In addition 5,329 charts were issued by the suboffice at Manila, P. I. There are now 149 sales agencies for charts, coast pilots, and tide tables, not including the subagencies of the Manila office.

Vessels.—Most of the vessels of the Survey have been a long time in use and require a large expenditure for repairs to keep them in condition for service. The annual appropriations for repairs is barely sufficient to provide for the ordinary repairs, and for any extraordinary repairs it becomes necessary to ask for additional appropriations.

The demand for surveys on the Pacific coast and particularly in Alaska is most urgent. It is earnestly recommended that provision be made for the construction of three new vessels, one of which is intended to replace one of the older ones in Alaska.

The construction of three small vessels for wire-drag work and resurveys on the Atlantic coast, to take the places of launches which it is now necessary to hire for that work, would be a means of economy and would increase the annual output of work.

The extension to the Coast and Geodetic Survey of the law providing for the compensation of employees for injuries incurred in the line of duty would be a matter of justice, as these employees are often required to work in situations and to engage in occupations where the danger of accident is great.

Triangulation of the Yukon River.—The triangulation of the Yukon River in Alaska as a permanent basis for topographic, geologic, and land surveys in that region is a project which has been recommended in the estimates of annual appropriations for several years past as a most desirable object and well worthy of attention. It is hoped that provision will be made for this work during the next regular session of Congress.

The work of the Coast and Geodetic Survey suffers seriously from inadequate clerical force, but especially from having to do its work under the most costly conditions, in unsuitable old buildings, with inadequate equipment, so arranged that every operation is more expensive than it ought to be, and under the constant risk of irreparable damage from fire.

STEAMBOAT-INSPECTION SERVICE.

STATISTICAL SUMMARY OF WORK.

During the fiscal year ended June 30, 1913, there were transported on vessels which by law are required to report the number of passengers carried 303,263,033 passengers. The total number of accidents resulting in the loss of life during this period was 66, an increase over the previous year of 27, and the number of lives lost was 436, including passengers and crew, an increase over the previous year of 172. Of the total number of lives lost, 226 were from suicide, accidental drowning, and other similar causes, which leaves 210 which can fairly be chargeable to accidents, collisions, explosions, or foundering. The total number of 436 lives lost, when compared with the number of passengers that were carried, makes a ratio of 1 life lost, including passengers and crew, for every 695,557 passengers carried.

The number of vessels inspected and certificated in the fiscal year 1913 was 7,965, with a tonnage of 9,071,992, an increase of 129 in number, with an increased tonnage of 316,712, compared with the previous fiscal year. Of the vessels certificated 6,395 were domestic steamers with a tonnage of 5,109,569, a decrease of 37 in number, with an increased tonnage of 237,037; and 450 were foreign passenger steamers with a tonnage of 3,427,314, an increase of 12 in number, with an increased tonnage of 42,409. Sail vessels and passenger barges to the number of 33 were inspected, with a tonnage of 16,298, a decrease of 5 in number and of 2,457 tons; and also 557 seagoing barges of 492,548 tons, an increase of 55 in number and of 34,303 tons over the previous year. Five hundred and thirty motor vessels with a tonnage of 26,263 were inspected and certificated, an increase of 104 in number and 5,420 tons over the previous year.

Licenses were issued during the year to 26,482 officers of all grades, a decrease of 1,554 from the preceding year. There were 7,670 applicants examined for visual defects, 84 of whom were rejected and 7,586 were passed. Compared with the previous year, these figures show an increase of 54 in the number examined and 176 in the number passed.

At the various mills 3,208 steel plates for the construction of marine boilers were inspected, a decrease from the previous year of 578, and of this number 208 were rejected. In addition to plates, there were inspected at the mills a large number of steel bars for braces and stay bolts for marine boilers and also several hundred plates for stock and repair purposes. Many requests were received from other branches and departments of the Government for the testing of boiler material at the mills. These received the attention of the Service, and prompt reports were rendered to the proper officials.

During the year there were examined and tested at various manufacturing 233,683 life preservers, of which 3,289 were rejected.

The total number of persons in the Service at the end of the fiscal year ended June 30, 1913, was 260, consisting of 185 officers, 74 clerks, and 1 messenger. Three vacancies existed in the Service on that date.

PRECAUTIONS AGAINST OVERLOADING OF PASSENGER STEAMERS.

The Bureau has always made an earnest effort to prevent the overloading of steamers carrying passengers, and it is believed that it has succeeded in greatly reducing this practice. There are two factors to be considered in the matter of the number of passengers that steamers are permitted to carry. The first is, Have the inspectors permitted the vessel by her certificate of inspection to carry more passengers than she can safely accommodate? and second, Have the officers of the vessel permitted more passengers to be carried than is allowed by her certificate of inspection? Under section 4464, Revised Statutes, the inspectors are required to state in every certificate of inspection granted to steamers carrying passengers, other than ferryboats, the number of passengers of each class that any such steamer has accommodations for and can carry with prudence and safety. Thus local inspectors have exclusive jurisdiction in the matter of fixing the number of passengers that may be carried on board steamers. In a country such as ours, with so many varied local conditions and so many different types of vessels, this is possibly the best arrangement that can be made, but the judgment of all men is not the same, and one inspector may err in permitting a steamer to carry more passengers than its capacity justifies, whereas another may err in not permitting a steamer to carry as many passengers as might be safely and prudently allowed. If it were practicable to have a uniform and general rule by which passenger allowance could be estimated, it would be most desirable, but under the varying conditions it is practically impossible to put such a rule into effect. The Bureau, however, has repeatedly warned local inspectors that the responsibility is theirs and that they would be held responsible in the event of disaster, and it is believed that these warnings and instructions have had a good effect. There is one factor, however, by which the allowance of passengers has been substantially controlled, and that is the rules at present in force in regard to lifeboat equipment, for where steamers are boated according to the number of passengers carried they are restricted in their passenger allowance by the extent of their equipment, and consequently can not carry a larger number of passengers than is justified by their lifeboat capacity.

The matter of preventing steamers from carrying more passengers than are allowed by their certificates of inspection received particular

attention during the past season, and a system of having inspectors actually count passengers and submit reports on small cards has been instituted and soon will be in general use by inspectors of the Steamboat-Inspection Service and by customs inspectors. This will enable the Department to be in immediate and close touch with the counting of passengers on steamers and do much to prevent overloading. It is believed that the counting of passengers should be entirely under the control of inspectors of the Steamboat-Inspection Service, which, of course, would require additional inspectors, because the small number at present available is not sufficient for that purpose.

HULL INSPECTION.

An examination of the General Rules and Regulations Prescribed by the Board of Supervising Inspectors will show that the board has given studious and intelligent attention to the matter of boiler construction and inspection. The General Rules and Regulations in this regard are respected and frequently referred to by various authorities in this and other countries. It is the purpose of the Supervising Inspector General, however, to increase the efficiency of the hull inspection. A long step in this direction was taken at the last meeting of the Board of Supervising Inspectors, in January, 1913, when a rule was adopted providing that in the inspection of hulls, boilers, and machinery of vessels the rules promulgated by the American Bureau of Shipping governing material and construction of hulls, boilers, and engines, except where otherwise specially provided for by the Rules and Regulations, will be accepted by inspectors as efficient standards of excellence. This was the first official recognition of the work of the American Bureau of Shipping. It should be a matter of pride to all Americans interested in the development of the American merchant marine to establish a standard of American ship construction that will be distinctly American, and it is hoped that the day will soon come when American shipbuilders will be governed by American standards and American specifications.

There is already in the General Rules and Regulations a requirement that the owner of every new vessel of over 100 gross tons, when making application for first inspection of the vessel, shall furnish the local inspectors of the district where the vessel is to be inspected drawings or blue prints, in plan and section, showing fully the general construction of the vessel, of wood, iron, or steel, including dimensions, spacing of frames, disposition of hull plates, outside and in, or of outside and inside planks, construction of decks, construction of transverse and longitudinal bulkheads and location of same, space between decks, and details of principal scarfs, and the owners are also required to furnish details of the shapes, dimensions, and

unit weights of all structural parts of the hull and the kinds of material of which made, including kinds of wood. A full description of the riveting of all parts of an iron or steel hull must be furnished. These data in the hands of the local inspectors enable them more intelligently to examine the hulls of vessels, and in after years, as a vessel goes from one district to another, to keep in touch with it with a view to determining exactly the extent of deterioration.

The effect of the increase in the number of details and items for hull inspection has been most beneficial, and comparison of the Rules and Regulations now in force with those of 10 years ago will show that the Service has made steady progress in the direction of efficient and intelligent hull inspection.

REINSPECTIONS.

While it is necessary that local inspectors make very rigid examination of vessels at the annual inspection, it is apparent that no matter how rigorous the annual inspection may be steamers would not be kept in good condition were it not for the reinspections required by this Service. Every excursion and ferry steamer is reinspected at least three times during the year for which the certificate of inspection is issued, or during the season of navigation, and while these reinspections require an increased expenditure for operating the Service the added expense is more than justified by the results obtained.

TRAVELING INSPECTORS.

The supervising inspectors of steam vessels do considerable traveling in their districts, with a view to obtaining uniform administration of law therein, but the Office of the Supervising Inspector General should have two traveling inspectors, who, working under the direction of that Office, could do excellent work in making reinspections, and the Supervising Inspector General would thereby be in closer and more intelligent touch with both the local inspectors and the supervising inspectors. This is the custom in other departments and in private services, and is fully justified by results.

MOTOR VESSELS.

The extension of the steamboat-inspection laws to the 250,000 motor boats which are said to exist in the United States is probably unnecessary, and is certainly impracticable without a large increase of the inspection force and of appropriations. Nevertheless, the existing conditions respecting motor boats should not be allowed to continue. The Supervising Inspector General has frequently referred to the desirability of extending the inspection of motor boats.

The Department inspects the hull and machinery of all steam vessels over 65 feet long and limits the number of passengers to be carried thereon, except that it has no authority to control the number of passengers carried on steam ferryboats.

As the law stands, only such steam vessels under 65 feet long as are tugs and towboats are inspected. Steam vessels less than 65 feet long carrying passengers are not inspected, nor are the number of passengers on such vessels directly limited—both for lack of legal authority. If steam vessels between 40 and 65 feet long carry passengers, the Department approves the design only of their boilers and machinery. It can only control the number of passengers to be carried on such vessels under the present law by the indirect means of regulating the life-saving equipment.

The Department, however, has no direct power over a motor vessel either as regards passengers or machinery. It can inspect the hull, tanks, and piping, but only when the vessel is of 15 tons measurement or more, and when it carries passengers or freight for hire. If, for example, the motor vessel is a private vessel of over 15 tons measurement, the Department can not inspect her in any way. Even if she is a towing motor vessel of this size, there exists no lawful power to inspect her.

The Department can not limit the number of passengers carried for hire on a motor vessel, however big, except by fixing the life-saving equipment. Over motor vessels smaller than 15 tons the powers of the Department are limited to seeing them provided with the necessary life-saving equipment, lights, life preservers, and means of extinguishing gasoline fires. Here the present powers of the Government stop.

I wish to make this perfectly plain. If a Government inspector stands upon a dock watching a motor boat sail away with three times as many passengers as she ought to have and her machinery defective and her hull leaking, he would have no power in the premises, were she a motor boat under 15 tons measurement, except to see that there was a life preserver in good order provided for every passenger on board, that she had the proper lights and the proper means of extinguishing gasoline fires, with a whistle and a bell of standard dimensions. He could, indeed, require such a vessel to have a licensed operator, but for that license no examination is required. The powers of the Department in this matter should be extended. Every man whose pleasures or pursuits take him upon the water may see that motor boats are frequently loaded with passengers or pleasure seekers beyond the margin of safety. Every motor vessel used for carrying passengers should be inspected by the local inspectors of steamboats and given a certificate of inspection. The examination need not be of such detail as that of a

steamer, but it should be sufficiently thorough to assure the passengers and the public that such boats are in good condition. It should, however, further be provided that motor vessels may not transport passengers in excess of a fixed number, perhaps 20 or 25, unless such boats have been subjected to the full inspection prescribed for steam vessels, and unless those in charge of them have been licensed after examination in the same manner as corresponding officers on steam vessels. At present a person may obtain a license as operator of motor vessels without being a citizen of the United States or without being 21 years of age, and while being unable to read or write. Under the law, licenses to operators of motor boats are issued without any examination whatever. The inspectors of the Inspection Service are without authority to ask whether the person applying for such motor-boat license is color blind or whether he understands or can read the pilot rules. Yet such persons, having a license so obtained, may, and in fact do, take charge of motor vessels carrying passengers for hire. Operators of motor boats should be required to show that they are not color blind and have good vision, that they can read the pilot rules and laws, and that they have a reasonable knowledge of them. The existing conditions are a menace to the lives of innocent and unsuspecting passengers and should not be permitted to continue.

The measures proposed could be carried into effect in a reasonable time and at a moderate expenditure of the public funds and would involve no hardship or undue restraint upon an important industry. The inspection would put the owner of the boat to no expense. The reckless navigation of an uninspected motor vessel jeopardizes the lives of passengers on inspected vessels, as well as those on the motor boat itself.

The numbering of motor boats for identification as automobiles are numbered is very desirable.

TRANSPORTATION OF DANGEROUS ARTICLES.

By section 4472, Revised Statutes, the Steamboat-Inspection Service is given a certain control and jurisdiction over the transportation of dangerous articles, but this control is confined to steamers carrying passengers. It does not extend to freight vessels. Dangerous conditions may arise in the transportation of articles that are not covered by section 4472, and the section should be amended so as to give the Steamboat-Inspection Service control over the entire situation, with authority to make regulations covering the water transportation of dangerous articles in somewhat the same manner as the Interstate Commerce Commission makes regulations covering the rail transportation of such articles. While there is not the same danger

incident to the transportation of dangerous articles on freight steamers as on steamers carrying passengers, because there is not so large a number of persons on board freight steamers, yet if an explosion should occur on a freight steamer while passenger steamers were navigating near by the loss of life would be very great.

The Steamboat-Inspection Service is very particular about enforcing the provisions of the statutes in regard to the transportation of gasoline on steamers carrying passengers. Under the provisions of section 4472, Revised Statutes, the transportation of gasoline by steam vessels when such gasoline is carried by motor vehicles is not prohibited, but it is provided that all fire in such vehicles shall be extinguished immediately after the vehicles enter the vessels, and that the fire shall not be relighted until immediately before the vehicles leave the vessels. The statutes further provide that any owner, master, agent, or other person having charge of passenger steam vessels shall have the right to refuse to transport motor vehicles the tanks of which contain gasoline, naphtha, or other dangerous fluids, and so much do the steamboat companies fear the dangers of gasoline that many of them refuse to carry automobiles that have gasoline in their tanks. Chauffeurs, however, endeavor at times to evade the vigilance of the officers of steam vessels and violate the statutes, thereby jeopardizing the lives of many persons traveling on steamers.

The officers in charge of steam vessels, as well as the inspectors of the Steamboat-Inspection Service, make earnest efforts to see that the rule in regard to the transportation of gasoline on steamers carrying passengers is not violated, in which efforts every citizen should cooperate to the end that the lives of passengers on such steamers may be safeguarded.

DIVISION OF FIRST SUPERVISING INSPECTION DISTRICT.

The first supervising inspection district embraces all waters and rivers of the United States west of the Rocky Mountains, and the Hawaiian Islands. The supervising inspector stationed at San Francisco, Cal., has charge of the local inspection districts of San Francisco, Cal.; Los Angeles, Cal.; Portland, Oreg.; Seattle, Wash.; St. Michael, Alaska; Juneau, Alaska, and Honolulu, Hawaii. The territory covered by this district is extensive, and no one man, no matter how efficient he may be, can supervise it properly. It is believed, therefore, that the work of the first supervising district should be divided, and the supervising inspector stationed at San Francisco should be required to supervise only the local districts of San Francisco, Los Angeles, and Honolulu. A new supervising inspector should be stationed at Seattle to supervise the local districts of Seat-

tle, Portland, St. Michael, and Juneau. This would permit more efficient supervision of the work in this territory. The Department in the estimates for the fiscal year 1915 asked for an additional supervising inspector, and if Congress makes an appropriation for the salary of this officer he will be assigned to duty as above described. In order to provide for such additional supervising inspector it will be necessary that section 4404, Revised Statutes, be amended to that effect.

At the last session of Congress authority was granted for the establishment of a board of local inspectors at Los Angeles, Cal., and appropriation was made, in the urgent deficiency bill approved October 22, 1913, for the salaries of a local inspector of hulls, a local inspector of boilers, and a clerk at that port.

CERTIFICATES OF INSPECTION.

The Department believes that it is not necessary to furnish steamers the large number of copies of certificates of inspection required by the present practice. The same purpose would be served if local inspectors furnished the original certificate direct to the vessel, supplying the collector or chief officer of customs with a copy thereof. The result would be a saving in the number of copies of certificates of inspection required, and the original copy could be furnished the master or owner of the vessel, which should always have been the practice. It is recommended that the law be amended in this respect.

CHANGE OF NAME OF SERVICE.

In his annual report for the fiscal year ended June 30, 1912, in speaking of the activities of the Steamboat-Inspection Service, the Supervising Inspector General points out how varied its work is. It now does more than inspect steam vessels, and therefore the name "Steamboat-Inspection Service" does not correctly describe the activities of the Service. It is recommended that the name of the Service be changed to Marine-Inspection Service.

SUPERVISING INSPECTOR GENERAL'S OFFICE.

The Supervising Inspector General, as required by law, gives his attention to the most important matter of obtaining uniform administration of the steamboat-inspection laws and the General Rules and Regulations passed by the Board of Supervising Inspectors. The central office does this in part by rulings, which are sent monthly to the Service and to the various interests of the merchant marine. It also publishes excerpts of letters to its inspectors in regard to mat-

ters that relate to the procedure of the Service, and in this way during the past year a greater uniformity has been obtained in the administration than ever before.

Uniformity of procedure is also obtained through the excellent card-index systems which have been installed in the Office of the Supervising Inspector General as well as in the offices of the local and supervising inspectors. For instance, to such an extent is there uniformity that it is possible for a clerk in the office of the local inspectors at New Orleans, La., to be transferred to the office of the local inspectors at New York, N. Y., and be familiar with the routine duties of that office. The matter of uniformity in clerical work, however, is really the least important. It is more important to obtain uniform inspection, and the Bureau obtains that result through its card system. To illustrate: Whenever a certificate of inspection of a vessel is issued, the local inspectors are required to file in their office a card entitled "Record of annual inspection" and forward a copy of that card to the Bureau at Washington. This card record of annual inspection contains data as to the name of the vessel, class and gross tonnage, the date inspection was completed, the local district in which inspected, the local district where previously inspected, the place where inspected, when hull was built, the date when same was rebuilt, the date when boilers were built, the date when boilers were rebuilt, the kind of service and the character of route, the number of passengers allowed, the number of officers and crew required, the name and address of owner, and detailed information in regard to the lifeboat equipment. With such a system the Bureau is in close and immediate touch with the local inspectors in the most outlying districts of the Service, and can by a careful examination of such cards ascertain whether inspectors are proceeding in the same manner at all places. When certificates of inspection are indorsed or amended, local inspectors are also required to furnish the central office with card reports setting forth the nature of such indorsement or amendment.

Whenever an officer's license is issued by the local inspectors, they are required to file in their office a card-form record of the license issued, copy of which is sent to the Bureau at Washington. This enables the Bureau to have an alphabetical index of all persons receiving licenses from this Service. These cards contain information as to the name and address of any person licensed, whether naturalized or native, the class and grade of license, the location of the board of local inspectors issuing same, the date of issue and number of former license, the date and number of issue of the new license, and the waters for which license is issued; and as indorsements are made from time to time upon such a license local inspectors

are required to file in their office a record of such indorsements and forward to the Bureau at Washington a copy of the card record of indorsement. Thus, as in the case of certificates of inspection, the Bureau at Washington is in intimate touch with all of the local inspectors and can ascertain if they are proceeding uniformly in all districts and are obeying the rules and regulations in regard to the issuing of licenses.

The Bureau requires local inspectors to submit reports of all casualties and violations of the steamboat-inspection laws, and it has a follow-up system by which it requires the inspectors to submit upon card forms the results of such investigations as they may conduct. The Bureau is able to ascertain through these casualty reports whether there is uniform administration in the matter of reporting violations and in taking necessary action incident thereto.

Local inspectors are required to file in their offices daily card records of work done, and to forward to the Bureau at Washington at the end of each day copies of these cards. By this method the Bureau is in close touch with the daily events in all the local districts.

The foregoing description of the card-index system of the Bureau shows the value of this system in obtaining uniform results. There is, however, not a sufficient number of clerks in the office at Washington to check these cards as rigorously as should be done. The Department has therefore asked for an additional clerk at \$900 per annum, and if this clerk is allowed by Congress it will be possible to check up closely the vessel-inspection, license, casualty, and daily cards that are now received, and thereby to correct errors which it can not at present take note of, because the clerks who file the cards have as much as they can do, in connection with their other duties, to see that certain important features are correct and to place the cards alphabetically in the cabinets.

BUREAU OF NAVIGATION.

TONNAGE OF THE MERCHANT MARINE.

The total documented merchant shipping of the United States on June 30, 1913, comprised 27,070 vessels of 7,886,518 gross tons. This is the largest tonnage in our history, and, excepting the British Empire, exceeds that of any other two nations combined. Of the total tonnage 1,027,776 gross tons were registered, showing the largest American tonnage for foreign trade in 27 years. Even more auspicious is the fact that over half of the year's increase was in tonnage for the foreign trade. Shipbuilding, too, prospered during the fiscal year, the output of our yards reaching 346,155 gross tons, an increase of 50 per cent over the previous 12 months. Under the

Panama Canal act of August 24, 1912, the privilege of American registry is free to foreign-built ships not over 5 years old. The apprehension so long felt or simulated that free registry for the foreign trade would injure domestic industry has been dispelled, as after 10 months' experience under free registry we are better off than before the law was enacted and face a future of abundant promise. The difference in the cost of building vessels for the foreign trade in the United States and abroad has been largely eliminated, and in consequence we are a long step nearer a normal share in the world's ocean-carrying trade.

NAVIGATION RECEIPTS.

The receipts from tonnage duties last year were \$1,273,789.43, an increase of \$117,778.68 over the receipts for the previous year and the largest receipts from this source since 1884, when an annual duty of 30 cents per ton was levied. Tonnage duties are imposed without discrimination and are virtually on a minimum revenue basis, the rates in this country being substantially equivalent to corresponding charges imposed on vessels in British ports and materially less than the corresponding charges levied by the other principal nations of Europe. These rates were not changed by the tariff act of October 3, 1913.

Collections during the year of annual excise from foreign-built yachts owned by Americans, under section 37 of the tariff act of 1909, amounted to only \$492.84. The law was repealed by the tariff act of October 3, 1913. The entire collections from the time it took effect, September 1, 1909, to June 30, 1913, amounted to \$68,619.21. The constitutionality of the law, it will be recalled, was disputed at the outset and the Supreme Court of the United States has not yet rendered a decision in the test cases. Excise amounting to upward of \$350,000 is involved in these cases, and in view of the repeal of the act the cases have been advanced on the calendar and the questions at issue will soon be determined.

SHIPPING COMMISSIONERS.

Shipping commissioners at 15 seaports shipped, reshipped, and discharged 379,188 seamen on American vessels during the past year, an increase of 4,405 over the previous year. The cost of the service was \$62,374.13, a reduction of \$999.40 compared with the previous year. The commissioner's office at Honolulu was abolished on July 7, 1912. When the Panama Canal is open it will undoubtedly be desirable to reestablish an office at this port, and if American shipping shall make such general use of the canal as is anticipated it will be necessary in another year to increase the clerical force of the shipping commis-

sioners' offices at several seaports. Furthermore, the shipping commissioners are charged generally with the enforcement of the navigation laws in so far as they relate to seamen on merchant vessels, and the enactment into law of any of the several measures relating to seamen which have been considered by Congress in late years should be followed by appropriations to enable the Department to give effect to such legislation.

SAFETY AT SEA.

I have deemed it best in this report to make few specific recommendations on the subject of navigation, because so many large projects for the improvement by law of conditions on the sea are still indeterminate and under discussion here and abroad. The conclusions upon which we may agree with other nations are beginning to assume definite shape and soon may be expressed in the form of conventions and statutes.

The subject of safety of life at sea has been ever present for two years in the minds of Congress and of the Federal administration. The results of long and careful study of its problems, both at home and abroad, should be assembled at the coming session of Congress in legislation which will stand the test—the actual saving of life in time of peril. The time expended in study will not have been wasted if the legislation enacted shall embody the best thought and the highest attainable standards of the maritime powers.

On November 12, 1913, representatives of the 14 principal maritime nations met at London to consider the subject and to draft an international convention, which doubtless will be laid before Congress early in the coming year. It is promising for the success of that conference, indicative of the spirit which prompted its meeting, and will, I trust, guide its deliberations, that a month before it met steamships of the United States, England, Germany, France, and Russia, hurriedly called to rescue a burning ship in a storm, cooperated to avert calamity. The willingness to work together and to subordinate individual action in the interest of a common humanity, shown by the captains of the 10 steamships which rescued passengers and crew of the steamship *Volturmo*, is not without its lesson to the Governments represented at London.

The Department has been hampered by lack of resources in making as thorough preparations for the conference as have been made by Great Britain, Germany, France, and possibly other nations. Last January the Senate Committee on Commerce and the House Committee on the Merchant Marine and Fisheries, charged with the consideration of matters affecting merchant shipping, were impressed with the importance of such preparations, and in joint session recommended an appropriation of \$10,000 to be immediately available for the purpose. To my regret the efforts of my predecessor and of

myself to secure this appropriation failed. Accordingly, in May, with the cooperation of the heads of other Departments, I organized six committees, made up of officers of these Departments, to consider respectively the following subjects: Hulls and bulkheads; efficiency of officers and crews; aids and perils to navigation; lifeboats, davits, life rafts, and life preservers; fire protection, and radiotelegraphy. I take this occasion to thank the members of these committees for the time and study which they have devoted to the problems set before them.

On October 4 the President appointed 12 commissioners to represent the United States at the conference, selected in part from the membership of the committees mentioned, and I am confident that through this commission the views of the United States will be adequately and earnestly conveyed to the conference.

The conference is considering an extensive program. If it is able to embody its conclusions in an international convention, and if the Senate of the United States will advise and consent to its ratification, the largest amount of affirmative legislation on navigation matters which Congress has considered in many years must be framed and enacted. Among the many topics to be included will be the subdivision of the hulls of ocean-going passenger steamers into water-tight compartments and more exact regulations as to bulkheads. This will involve an extension of the powers of the Department, and if those powers are to be exercised and the will of Congress properly executed adequate appropriations must be made for the purpose. So far as lifeboats and other life-saving appliances are concerned, the large grant of powers already bestowed upon the Department will probably prove ample, but I believe that Congress should vote the Department enough money to conduct inspections when needed other than at annual fixed periods. Adequate protection against fire has repeatedly been urged.

By the foresight of Congress the United States already has statutes in successful operation requiring apparatus and operators for radio communication on passenger and cargo steamers on the ocean and the Great Lakes, and there is reasonable probability that our legislation on this subject will be adopted in principle by nations generally. The value of wireless apparatus is undisputed and there can be no question of the need of maintaining a rigid and constant inspection of the apparatus and operators on American and foreign ships leaving our ports.

RADIO COMMUNICATION.

During the past fiscal year the duties of the Bureau of Navigation in respect to radio communication were greatly extended. By the act of July 23, 1912, ships required to carry wireless apparatus and operators under the act of 1910 were required also to carry an

auxiliary power supply for emergency use in event of the failure of the ship's main power supply. In the three notable marine catastrophes of this autumn, the loss of the steamships *State of California*, *Templemore*, and *Volturno*, it was necessary to resort to the auxiliary batteries, as the main engines of the ships became disabled. The inspection of the auxiliary apparatus has increased the work of the inspectors. The same act prescribed a constant watch with two operators on shipboard, where previously one only had been required. The act further prescribed means of constant communication between the watch officer on the bridge and the operator in the radio room. In addition, after April 1, 1913, the act became applicable to vessels on the Great Lakes, and since the beginning of the current fiscal year these several requirements have applied to cargo steamers with crews of 50 or over. The enforced use of wireless was so extended, indeed, that for a time the manufacturers of apparatus and the training schools for operators found difficulty in supplying demands created by the legislation.

The act of August 13, 1912, to regulate radio communication and to give effect to the Berlin Radiotelegraphic Convention, went into operation on December 13. Since that time the inspection force has been engaged in the examination and licensing of land stations in addition to its duties in respect to ships. Under the operation of these several laws the field radio service during the fiscal year 1913 made 3,201 inspections of ships and 715 inspections of land stations, and examined and licensed 1,427 radio operators. The service, which in 1911 was virtually confined to the seaports of New York, Baltimore, New Orleans, and San Francisco, has been extended, as far as 11 men can accomplish that result, to all the principal seaports and ports on the Great Lakes and to some of the principal interior centers of radio communication, and by two inspection trips the system of Federal supervision has been partially established in Hawaii and Porto Rico.

The expenses of the radio-inspection service for the past fiscal year were \$144.45 less than the appropriation of \$37,880. In the estimates for the coming year, I have asked for \$48,750—an amount barely sufficient to meet the necessities of the service and inadequate if by legislation its duties are to be increased over those now imposed on it. Wireless telegraphy has so conclusively demonstrated its value at sea, and its use ashore is extending so rapidly, that it requires no foresight to affirm that Congress will be called on hereafter to extend the inspection service.

LOAD-LINE CONFERENCE.

The tendency of modern commercial and industrial life to eliminate waste and reduce superfluous expenditure of effort is responsible in a large measure for the increasing demands for cooperation among

nations. The results obtained by standardization in American industrial development are familiar. The aim of international conferences frequently is to establish standards in commerce which will insure fair terms of competition for all, economy of time and effort, and at the same time efficiency and safety. The depth, for example, to which an ocean cargo boat may be loaded with safety does not depend on the flag of the nation it flies. It is determined by natural laws. Unless there be agreement among nations that these laws shall be uniformly recognized, nations which observe them rigidly in the interest of safety may be on unequal terms of commercial competition with other nations less scrupulous about safety of life. The observance of different standards in different countries, furthermore, involves expenditure of time to no useful end. The appropriation of \$5,000 by Congress for American representation at the International Conference on Load Lines for Merchant Ships at London next spring will result in a direct commercial gain to our sea-borne commerce and an even more desirable improvement in the security of labor and capital employed in ocean transportation. The conclusions of the conference probably will not be available for the consideration of Congress at the next session, but any delay in action will be more than offset by the advantages from uniform action by maritime nations.

SHIPPING COMBINATIONS.

The Committee on the Merchant Marine and Fisheries, under resolution of the House of Representatives during the Sixty-second Congress, made a searching investigation into shipping combinations in the foreign as well as the coasting trade. The report and conclusions of the committee will speak with that authority which usually accompanies painstaking and impartial effort to establish definitely essential facts. The legislation which that committee doubtless will recommend will probably require considerable time and effort on the part of Congress. In recommending legislation on navigation matters in the name of the Department of Commerce I have kept in mind that part of the time which Congress can devote to these subjects already has been preempted for the consideration of legislation which will embody the matured conclusions of one of its own important committees.

ENFORCEMENT OF THE NAVIGATION LAWS.

The efforts of the Department to secure a thorough compliance on the water with the laws relating to the navigation and inspection of vessels were maintained throughout the year, except during the months of July and August before funds became available under the appropriation act. The fines, penalties, forfeitures, and costs involved in 3,506 cases of violations of various statutes considered by the Department amounted to \$31,987.85. The amount during the cur-

rent fiscal year will be considerably larger. In meritorious cases the Department has considered all mitigating circumstances, and in cases of reasonable doubt the benefit has been given to the offender. At the same time the Department is aware that a critical public and press look to it to exact compliance with those conditions of security which Congress has aimed to promote by law. I believe that a sum equivalent to the penalties collected for violations of these laws should be set apart annually for the use of the Department in extending further its efforts to carry out these laws. For this reason the estimates for the current year carry an item of \$35,000, instead of \$15,000, which has been appropriated annually since 1910. Even this amount, I am confident, will be exceeded by the receipts from fines, penalties, and forfeitures under the policy pursued by the Department, and the service will therefore be self-sustaining.

With part of this proposed appropriation the Department will buy and operate a second vessel similar to the motor boat *Tarragon*, which has been most useful in enforcing the laws. The *Tarragon* was in commission 225 days during the fiscal year, visited 19 customs districts, inspected several thousand vessels, and reported 902 infractions of the laws. The penalties incurred aggregated \$279,190, which the Department mitigated to \$5,504. The cost of operating the boat was \$7,743.20. It was thus nearly self-sustaining. During August and half of September, 1913, its officers reported 605 violations of law in New York Harbor and vicinity. The boat has been fitted with the best wireless apparatus devised by the Bureau of Standards and it has been instructed to visit between January and July, 1914, every port from Key West, Fla., to Eastport, Me.

The policy of the Department in fining offenders against the navigation laws is to mitigate the penalties to a nominal sum in cases of first offenses where the offenses have been unintentional. Experience shows that most boat owners are willing to comply with the law when its provisions are made clearly known to them in a courteous spirit. It is rarely necessary to exact a severe penalty, and only in cases where the violation of law has been deliberate or serious. Investigation shows a much fuller compliance with the requirements of law than has hitherto been the case and a much greater activity on the part of the local officers whose duty it is to enforce the navigation laws.

ADMEASUREMENT OF VESSELS.

It is important that our laws governing the measurement of vessels be revised at the coming session of Congress. This subject is somewhat complex, both on account of the technical details involved and of questions of general policy. At present the laws of the United States on this subject resemble closely the laws of Great Britain, Germany, and other maritime nations except as to the measure-

ment of shelter decks and certain spaces for passengers constructed above the first deck not a deck to the hull. The rules for the measurement of vessels passing through the Panama Canal differ materially from the British and German rules and resemble closely the rules employed by the authorities of the Suez Canal. The new Panama rules increase appreciably the net tonnage of vessels, upon which most maritime charges are levied, above the net tonnage ascertained under the British and German rules. This increase is due primarily to the adoption of the so-called "Danube rule" for measuring propelling power spaces and to more rigid rules concerning shelter decks. It is well, therefore, to decide whether the general rules for the ports of the United States shall be brought into accord with new Panama rules or whether our American rules in the respects mentioned shall be more closely assimilated to the practice of Great Britain, Germany, and maritime nations generally. The former course will involve an increase in charges on shipping, American and foreign, in all phases of navigation throughout the United States. The latter course will in some instances diminish those charges. The question does not materially affect the Federal revenue from tonnage taxes, which amounts to over \$1,200,000 annually. Any likely change in the rules would not increase or decrease this revenue by 10 per cent. The Federal charges on shipping are very light, however, by comparison with the charges which shipping is required to pay in foreign ports and with the various charges based on tonnage for State and local purposes and for private services rendered. The matter is now being carefully considered by the Department, and at a later day a bill embodying its views will be submitted to Congress.

ANCHORAGES.

The enactment of a law authorizing the Secretary of Commerce to define anchorage grounds for vessels in improved harbors and bays and to enforce the observance of regulations is recommended. The power requested is to be exercised only when maritime and commercial interests demonstrate that such regulation is required for safe navigation. The Secretary of Commerce now has this power for the harbors of New York and Chicago, and every year requests are made for the exercise of similar powers at other seaports, usually after an explosion or fire on shipboard has drawn attention to the lack of legislation on the subject.

In particular the attention of the Department has been drawn to the necessity of defining anchorage limits in Hampton Roads. Many hundreds of vessels arrive and leave these waters each month. Some lie in the Roads for days and even weeks. These ships have no designated anchorage grounds, and incoming and outgoing vessels must zigzag through this anchored fleet in daylight and darkness

in all kinds of weather. Among these vessels are many important passenger steamers, carrying a monthly average of over 60,000 passengers. There is no semblance of a regulation as to where vessels shall anchor along the route covered by this commerce, for the harbor master's limits from Norfolk and Newport News do not extend to these waters. During the last 10 years many accidents have occurred in this locality from the above conditions.

The regulation of anchorages is general throughout the maritime world, and in the United States seems to be peculiarly a function of the Federal Government and especially of the Department of Commerce, which is charged with the execution of the laws relating to commerce and navigation. A bill such as is recommended passed the Senate in the last Congress, and I trust time will suffice for its favorable consideration by both branches of the present Congress.

DECK LOADS.

The transportation of deck loads of timber on the Atlantic, especially during the winter months, is attended with danger, and in the regulation of such transportation we have been backward. The loss of one of these cargo boats does not attract the notice which is aroused by the risks incurred by ocean passengers, but it is not to our credit that Great Britain and Canada should have shown more consideration for the lives of seamen engaged on such ships than we have done. Again, derelicts, which fill so large a place in the public eye, are almost always lumber-laden vessels, and our failure to regulate such deck loads contributes to the creation and maintenance of these menaces to navigation. The Department during the year has been in consultation with those on both sides of the Atlantic concerned in this subject, and a measure of relief will be prepared for the consideration of Congress at the coming session.

CONCLUSION.

Since any summary of the current work of the Department which included only a statement of its condition and procedure to the close of the fiscal year ended June 30, 1913, would be not only incomplete but inaccurate in giving a view of the actual existing conditions, I have ventured to enlarge this report sufficiently to indicate the plans for future work. These plans had their rise during the fiscal year covered by this report and may be esteemed a normal outgrowth of the work and the conditions to which the report technically refers. The separate reports of the several bureaus of the Department will give its work in detail and to them I must refer for a more complete discussion of the service the Department is endeavoring to render the public.

Respectfully,

WILLIAM C. REDFIELD,
Secretary.

REPORT

OF THE

SECRETARY OF LABOR.

DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, December 31, 1913.

To the PRESIDENT:

In accordance with the requirements of section 9 of the act of Congress approved March 4, 1913, entitled "An act to create a Department of Labor," I respectfully submit for transmission to Congress the first annual report of the Secretary of Labor.

Describing the present incomplete organization of this Department and its work for the four months of the fiscal year following its creation, my report also describes the work of its subordinate bureaus for the eight months preceding—before the Department existed and while its bureaus were under the jurisdiction of the Department of Commerce and Labor. In less detail, yet with considerable fullness, material is included descriptive of work in execution of the Secretary's authority to act as mediator in labor disputes. The report is in this particular brought down to the close of the calendar year. Supplementary to descriptions of work, suggestions and recommendations are offered and financial estimates for the next fiscal year presented. Both the descriptive and the suggestive parts of the report may be better understood if the purpose and origin of the Department are first considered.

PURPOSE OF THE DEPARTMENT.

WELFARE OF WAGE EARNERS.

The Department of Labor was created in the interest of the wage earners of the United States. This is expressly declared by the organic act. "The purpose of the Department of Labor," as that act reads in its first section, "shall be to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment."

There is of course no authority in that declaration to foster, promote, or develop for wage earners any special privileges; but the

inference is irresistible that Congress did intend to conserve their just interests by means of an executive department especially devoted to their welfare.

ORGANIZED AND UNORGANIZED LABOR.

Nor is there any implication that the wage earners in whose behalf this Department was created consist of such only as are associated together in labor unions. It was created in the interest of the welfare of all the wage earners of the United States, whether organized or unorganized. Inasmuch, however, as it is ordinarily only through organization that the many in any class or of any interest can become articulate with reference to their common needs and aspirations, the Department of Labor is usually under a necessity of turning to the labor organizations that exist and such as may come into existence for definite and trustworthy advice on the sentiments of the wage-earning classes regarding their common welfare. Freely as conferences with unorganized wage earners are welcome, official intercourse with individuals as such has practical limits which organization alone can remove. Manifestly, then, the Department of Labor must invite the confidence and encourage the cooperation of responsible labor organizations and their accredited officers and committees if it is to subserve its prescribed purpose through an intelligent and effective administration of its authorized functions.

FAIRNESS TO ALL INTERESTS.

While the Department of Labor sustains friendly relations with labor organizations, as in the interest of all wage earners and of the general welfare it ought to do, nevertheless this attitude must not be exclusive. Similar relations with unorganized wage earners, and also with employers and their organizations to the extent to which they themselves permit, are likewise a duty of the Department. The great guiding purpose, however—the purpose that should govern the Department at every turn and be understood and acquiesced in by everybody—is the purpose prescribed in terms by the organic act, namely, promotion of the welfare of the wage earners of the United States.

In the execution of that purpose the element of fairness to every interest is of equal importance, and the Department has in fact made fairness between wage earner and wage earner, between wage earner and employer, between employer and employer, and between each and the public as a whole the supreme motive and purpose of its activities. The act of its creation is construed by it not only as a law for promoting the welfare of the wage earners of the United States by improving their working conditions and advancing their opportunities for profitable employment, but as a command for

doing so in harmony with the welfare of all industrial classes and all legitimate interests, and by methods tending to foster industrial peace through progressively nearer realizations of the highest ideals of industrial justice.

ORIGIN OF THE DEPARTMENT.

Although the Department of Labor is the youngest of the executive departments, suggestions and proposals for such a department appear to have been urged continuously since the Civil War. So numerous and persistent were they over the long period intervening between the earliest of them and the creation of this Department, an interval of nearly half a century, as to indicate a steadily strengthening popular demand for some such act of Congress as that under which this Department operates.

EARLY PROPOSALS.

A department of the Federal Government with reference to the welfare of wage earners, and with a secretary in the President's Cabinet to speak for them, was advocated in 1865 by prominent labor leaders. Their suggestions appear to have been officially adopted in 1866 by the labor organizations of that period. Probably the only earlier proposal in anywise of similar character was that of a bill introduced in Congress in 1864 by the Hon. Gottlieb Orth, then a Representative from Indiana, for the creation of a "Department of Industry." Numerous formal measures bearing on the subject were proposed in Congress from that time forward during the following 40 years or more. More than a hundred bills and resolutions anticipating the present Department of Labor and introduced between 1864 and 1902 are summarized at pages 13 to 21 of the public document entitled "Organization and Law of the Department of Commerce and Labor," published from the Government Printing Office in 1904 and now out of print. In 1867 congressional action was secured, but only on a resolution instructing the Committee on Rules to inquire into the expediency of the creation of a standing labor committee.

Some of the measures introduced in Congress, both before and afterward, were more intimately related to the commercial and business side of industrial affairs than to the wage-earning side. Others, however, distinctly anticipated the present Department of Labor and its principal functions. Among the latter was a bill, passed by the House of Representatives in 1871, for the appointment of a commission on the subject of wages and hours of labor and the division of profits between labor and capital in the United States. There were also bills for establishing a "Bureau of Labor," a "Labor Bureau in connection with the Department of Agriculture," a "Bureau of

Labor with a Commissioner of Labor," a "Bureau of Labor Statistics," a "Bureau of Labor Statistics in the Interior Department," and a "Department of Industry." None of these bills was enacted. But several others of similar tenor and purpose, introduced at the first session of the Forty-eighth Congress (1883-84) were followed in 1884 by preliminary legislation in the direction of the present Department of Labor.

BUREAU OF LABOR.

Among those bills was one in the Senate for a "Bureau of Labor Statistics," introduced by Senator Blair. In the House there was one for a "Bureau of Statistics of Labor and Industries," by Representative Willis; one for a "Bureau of Labor Statistics," by Representative O'Neill; one for a "Department of Labor Statistics," by Representative Hopkins; one for a "Bureau of Labor Statistics," by Representative McKinley (afterwards President); one for a "Department of Industry," by Representative Foran; and one for a "Bureau of Labor Statistics," by Representative Lamb. Out of these an act was framed. As a result therefore, of 20 years of agitation over the country and of effort in Congress for a department of the Federal Government especially representative of the interests of wage earners, this act, approved June 27, 1884, created a bureau in the Department of the Interior by the name of the "Bureau of Labor." That original "Bureau of Labor," transformed in 1888 into an independent department by the name of the "Department of Labor," with a Commissioner of Labor as chief and therefore not of sufficient rank to be called into the Cabinet by the President, was placed in 1903 under the jurisdiction of the Department of Commerce and Labor as the "Bureau of Labor." It has now come under the jurisdiction of this Department as the "Bureau of Labor Statistics."

DEPARTMENT OF COMMERCE AND LABOR.

Meanwhile the original agitation for a Department of Labor with a Secretary of Labor in the President's Cabinet continued. In 1885 Representative Weaver introduced a bill for an executive Department of Labor with a Secretary of Labor. General Weaver's bill was referred to the Committee on Labor and got no farther; but during the next 18 years several bills having the same or a similar purpose were introduced, and at the end of that time substantial legislative progress was made. In form these bills were of considerable variety, although their purpose appears to have been much the same, and some were quite alike in title to some of those introduced during the period preceding the creation of the original Bureau of Labor. Among them were bills to establish, respectively, a "Department of Agriculture and Labor," a "Department of In-

dustry and Bureau of Labor," a "Department of Labor," a "Department of Agriculture and Industry," and a "Department of Industries." None was enacted. During this second period, however, several bills of a somewhat different character and purpose were introduced which ultimately played an important part in the creation of the present Department of Labor. Whatever the title any of them may have borne, the object of all was a "Department of Commerce." These proposals for an executive department in the interest of commercial business being finally blended with those for an executive department in the interest of the welfare of wage earners, the Department of Commerce and Labor was created by act of Congress approved February 14, 1903.

DEPARTMENT OF LABOR.

For 10 years thereafter the welfare of wage earners of the United States was consequently intrusted to an executive department designed to represent the interests also of employers. This amalgamated representation of interests that are at times in serious conflict proved unsatisfactory. An executive department the same in principle as that which had for nearly half a century been urged in the interest of wage earners was demanded with greater popular emphasis than before, and after 10 years, the Department of Commerce and Labor being transformed into the Department of Commerce, the present Department of Labor was created by the act of Congress of March 4, 1913, entitled "An act to create a Department of Labor." All functions relating more especially to the business side of industrial problems were by that act assigned to the Department of Commerce; the Department of Labor was more especially charged with those that relate to the welfare of wage earners.

Formal organization of the Department of Labor began with the date of its creation, March 4, 1913.

ORGANIZATION OF THE DEPARTMENT.

The Department of Labor consists of the Office of the Secretary of Labor and four subordinate bureaus.

The Office of the Secretary comprises (1) the Secretary of Labor, (2) one Assistant Secretary of Labor, (3) a Solicitor, (4) a Chief Clerk, (5) a Disbursing Clerk, (6) a Division of Publications and Supplies, and (7) a Division of Appointments.

The bureaus of the Department are (1) the Bureau of Labor Statistics, (2) the Bureau of Immigration, which includes the Division of Information, (3) the Bureau of Naturalization, and (4) the Children's Bureau.

SECRETARY.

The Secretary of Labor directs the collection and dissemination of statistics relating to the condition of labor and to the products of labor. He has authority to call upon other departments of the Government for statistical data obtained by them on the same subject. He directs, in his discretion, the correlation, arrangement, and publication of all such matter. It is further his duty to collect and publish information regarding labor interests and labor controversies in this and other countries. The act of Congress for compensating certain employees of the United States injured in the service is administered by him. He enforces the immigration laws, the Chinese-exclusion law, and the naturalization laws. Matters pertinent to child life are also under his supervision. In addition to those functions, formerly belonging to the Secretary of Commerce and Labor, the Secretary of Labor is invested with the new departmental function of acting as mediator and appointing commissioners of conciliation in labor disputes whenever in his judgment the interests of industrial peace may require it to be done.

ASSISTANT SECRETARY.

The Assistant Secretary of Labor performs such duties as are prescribed by the Secretary of Labor or may be required by law. No other duties are now required of him by law than those prescribed by the Secretary, except that in case of the death, resignation, absence, or sickness of the Secretary, the Assistant Secretary must, unless otherwise directed by the President, perform the duties of Secretary until a successor to the Secretary shall have been appointed or his absence or sickness shall have ceased.

SOLICITOR.

The Solicitor of the Department of Labor is an officer of the Department of Justice. He is assigned to the Department of Labor as its chief law officer. Accordingly, he examines and advises regarding all contracts, leases, and bonds affecting the administration of the affairs of the Department and all claims under the act of Congress for compensating Government employees injured in the service. He also prepares legal opinions and performs such other services in connection with the administrative work of the Secretary of Labor as may be required of him by or on behalf of the Department or its bureaus.

CHIEF CLERK.

Under the immediate direction of the Secretary of Labor, the Chief Clerk has general management of the clerks and employees of the Department and the enforcement of its regulations. He superin-

tends all building accommodations of the Department in the District of Columbia. He supervises all expenditures of contingent appropriations and rents. The mail of the Department and its various bureaus is received and distributed by him. He also discharges all the miscellaneous business of the Office of the Secretary which is not otherwise assigned.

DISBURSING CLERK.

The Disbursing Clerk is charged with the custody and expenditure of Department appropriations, with the custody of receipts from naturalization fees, with supervision of transportation requests and vouchers, and with the auditing of all the accounts of the Department and its bureaus.

DIVISION OF PUBLICATIONS AND SUPPLIES.

The Chief of the Division of Publications and Supplies supervises the printing and distribution of departmental publications and blank forms, and is in direct charge of the business of the Department with the Government Printing Office. He has the custody and general supervision of the purchase and distribution of supplies, and has under his direction the Department's advertising. He also compiles semiannual returns of all public property under the control of the Department.

DIVISION OF APPOINTMENTS.

The Appointment Clerk prepares all papers connected with appointments, transfers, promotions, reductions, details, furloughs, and removals of employees of the Department, and is custodian of the oaths of office and of the personal files of employees and of their efficiency reports.

WORK OF THE DEPARTMENT.

MEDIATION IN LABOR DISPUTES.

First among the duties of the Secretary of Labor are those with reference to the new Federal function of mediation in labor disputes. This function, as yet incompletely organized from lack of appropriations applicable by law to its systematic execution, rests upon that part of the organic act which provides:

SEC. 8. That the Secretary of Labor shall have power to act as mediator and to appoint commissioners of conciliation in labor disputes whenever in his judgment the interests of industrial peace may require it to be done; * * *

No suitable provision having yet been made by Congress for the organization within the Department of a bureau or division equipped for administering the power thus created and conferred, it has been

administered by the Secretary with only such assistance as could be drawn temporarily from bureaus organized for other purposes. Notwithstanding this handicap, however, in addition to difficulties of a kind that usually obstruct the development in practice of novel administrative functions, appreciable progress has been made by the Department in conserving the interests of industrial peace.

MEDIATIONS.

Under the law quoted above, the Secretary of Labor has acted officially as mediator in several labor disputes which have consequently been adjusted to the satisfaction of both sides, to the advantage of their respective industrial interests, and to the benefit of their respective communities.

NEW YORK, NEW HAVEN & HARTFORD RAILROAD CLERKS.

The first of these disputes was between the New York, New Haven & Hartford Railroad Co. on one side and its clerks (members of the Brotherhood of Railway Clerks) on the other. After several conferences between the two had failed to bring about a satisfactory adjustment, they made a joint request, May 24, 1913, for mediation by the Secretary of Labor.

Mr. G. W. W. Hanger (then chief statistician of the Bureau of Labor Statistics and Acting Commissioner of Labor) having been thereupon detailed as commissioner of conciliation, the matters at issue were taken up by him in conference with each of the parties at New Haven, Conn. These conferences continued until June 2, 1913, when a satisfactory adjustment was secured, covering all points at issue. The controversy hinged mainly on different interpretations of a prior agreement as to rules governing wages, seniority rights, and other conditions of employment which had been made by the clerks' organization with a previous general manager of the railroad in January, 1913.

In evidence of the adjustment secured through Mr. Hanger as commissioner of conciliation, a formal joint agreement was signed June 2, 1913, by the general manager in behalf of the railroad and by the vice grand president of the Brotherhood of Railway Clerks in behalf of the clerks.

ERIE FORGE CO.

Another of the labor disputes adjusted satisfactorily by conciliation through this Department arose in the works of the Erie Forge Co. at Erie, Pa. A strike had begun before the president of the company knew it was brewing or suspected any grievances. Requests for mediation were made to the Department of Labor on the 17th of June, 1913. As in the first case noted above, these requests came from both sides. In response, the Secretary of Labor appointed the

Assistant Secretary as commissioner of conciliation, and on the 20th of June cordial relations were restored.

This dispute having been caused by friction between wage earners and foremen, the resulting strike was apparently due to the fact that no contractual arrangement of a responsible kind existed with the employer, under which friction might be abated and grievances adjusted before a strike had excited hot blood. An agreement guarding against such contingencies in future was the principal characteristic of the settlement secured.

Under this settlement the Erie establishment, which seems to have been liberally conducted as to wages and working conditions, was thereafter to be managed with reference to wage earners about as before except in one particular. A plan was established for bringing disturbing grievances to the personal attention of the president of the company by providing definitely for appeals from foremen to superintendent and from superintendent to president. Up to this point the agreement inures to the benefit of all wage earners in the establishment regardless of union membership. Such of them as do not belong to a union are now guaranteed a hearing by their court of last resort, the responsible employer. Those who do belong to unions, while they also are guaranteed this primary appeal to the head of the employing establishment, have the further right of appeal from him to their national labor organizations. Meanwhile, as the agreement is signed jointly by the employer and the national officers of the organized wage earners, the employer is reasonably secure from strikes which he may wish to avert. No dispute can very likely expand into a strike unless, with knowledge of all the circumstances, both the responsible employer and the national officials of the labor organization concerned deliberately conclude that the strike can not be averted.

READING RAILROAD CAR WORKERS.

A strike or lockout in the shops of the Philadelphia & Reading and the Lehigh Valley railroads had been in progress since the fall of 1912, and the department of labor and industry of Pennsylvania had been called upon to mediate. At the request of that department, this Department offered its good offices also, naming Mr. Hanger as commissioner of conciliation. A satisfactory agreement was consequently signed at Reading, Pa., July 12, 1913, by the general manager of the company, the representative of the International Association of Car Workers, the Pennsylvania commissioner of labor, and the commissioner of conciliation for this Department.

Subsequently unexpected friction arose which delayed final settlement. But the department of labor and industry of Pennsylvania informed this Department, by letter of July 17, 1913, that the conditions causing the friction were not within the control of the repre-

sentatives of either department, and that the work of the two representatives had "done much toward bringing the management and employees together."

READING HARDWARE CO.

While Mr. Hanger was acting as commissioner of conciliation for this Department in connection with the Reading Railroad dispute reported above, a request for mediation by the Secretary of Labor in a factory strike in Reading, Pa., reached the Department. This was about June 17, 1913. The request came from the wage-earning side, but the employers acquiesced in the proffered mediation.

Thereupon this Department arranged for cooperation with the State department of labor and industry of Pennsylvania, Mr. Hanger representing this Department as commissioner of conciliation. He and his coadjutor of the Pennsylvania department were received in a conciliatory spirit by the employers concerned, and the strike was brought to an end by mutual agreement on the 17th of June—one month after the request for mediation.

BALTIMORE & OHIO RAILROAD SHOPS.

Another labor dispute in which the request for mediation was made by representatives of the wage earners and acquiesced in by the employers came to the Department on the 21st of July, 1913. It had arisen in the shops of the Baltimore & Ohio Railroad system, where a "strike vote" was then in progress over a question of objectionable working conditions. The Secretary responded to the request for mediation by appointing John A. Moffitt as commissioner of conciliation, detailing him from the Immigration Service. Upon Mr. Moffitt's tender of the good offices of this Department, the appropriate officials of the railroad company took the dispute into consideration. As a result of the mutual concessions that followed, each side animated by conciliatory impulses, a satisfactory settlement was made, whereby an impending strike that must have been prejudicial to both parties and to the public was averted.

WESTERN MARYLAND RAILROAD SHOPS.

Another railroad-shop strike, averted through the mediation of the Department of Labor, was impending in November, 1913, in the shops of the Western Maryland Railroad.

Owing to a labor dispute in one shop a small strike began there; but in consequence of efforts promptly made by the national officers of the wage-earners' organizations affected, an understanding was reached. In effect, it was understood that the striking wage earners should on their part return to work and that on the part of the

employer their grievances should be immediately considered for adjustment. Upon their return to work, however, some of their number (so they averred) were refused reemployment.

This situation was rapidly developing a strike in all the shops of the railroad system when mediation by the Secretary of Labor was requested by national representatives of the wage earners' organizations concerned. Communication between the Department and the president of the railroad having thereupon been opened, and the president having responded courteously and favorably to the Department's suggestions, the dispute was adjusted by mutual arrangement between the parties and without any of the bitterness or losses of an industrial conflict.

CHICAGO & ALTON RAILROAD SHOPS.

A settlement has been similarly effected in another dispute in railroad shops—the machine shops of the Chicago & Alton Railroad. There was a strike impending when a request for mediation was made by the wage earners concerned, October 28, 1913. Upon their petition the Secretary of Labor appointed James Hogan, of the Immigration Service, as commissioner of conciliation. His overtures being accepted by the railroad, the disputed points involved in the controversy—37 in all—were adjusted in December by mutual concessions and agreement. A full settlement was thus secured and the strike averted.

Both sides to those amicably settled labor disputes may be congratulated upon their enlightened self-interest. They promoted their own prosperity the better by preferring friendly mediation to embittered strife. And both deserve praise for enlightened patriotism. Instead of challenging the miseries and perils of an industrial warfare which is waged by fighting methods peculiar to the different economic advantages possessed by each combatant, and in which unconditional surrender is the irreducible demand of each upon the other and destruction of the just interests of one or both the probable finality—instead of clinging to this unpatriotic policy, the disputants in those cases settled their disputes pursuant to a policy that harmonizes with the best ideals of American citizenship. By resisting the temptations that usually harass both sides in labor disputes, they have promoted the interests of industrial peace.

INDIANAPOLIS STREET CAR STRIKE.

A labor dispute in which a sensational strike might have been averted by the conciliatory spirit that characterized the settlement of the disputes described above, but which for lack of that spirit went to the extreme, arose in October in connection with the electric street railway system in Indianapolis.

Mediation by the Secretary of Labor having been requested by the wage-earning side of the dispute which preceded that strike, Mr. Ethelbert Stewart, chief statistician of the Bureau of Labor Statistics, was detailed October 27, 1913, to act as commissioner of conciliation. Local employers' organizations at first obstructed his conciliatory efforts, taking the untenable position that there was nothing to mediate because no labor dispute existed. As the employers involved in the dispute refused to consider proposals for conciliation, the impending strike broke out—to the injury of the employers, of the wage earners directly concerned, and of the city. Great expense also was incurred by the State for military intervention. All this might have been prevented, with fairness to every interest, by the prompt arbitration by unbiased arbitrators which this Department proposed and which the wage earners' organizations accepted but which the employers refused to consider. After the strike had begun it was settled by the arbitration method previously declined.

The governor of Indiana having ordered troops to Indianapolis to preserve the peace, they were withdrawn upon the termination of the strike by means of an arbitration agreement. This agreement was secured largely through intercessions by the Department both at Indianapolis and with eastern capitalists interested in the street car property.

INDIANAPOLIS TEAMSTERS' STRIKE.

Hardly had the Indianapolis street-railway dispute been put in the way of arbitral adjustment when mediation of the Department was solicited in connection with a teamsters' strike in the same city.

The request in this case came also from the wage earners and the Department's offer of mediation was also at first rejected by the employers; but the Solicitor for this Department, who was appointed commissioner of conciliation, December 3, 1913, secured conferences with the employers involved, whereupon numerous individual settlements were effected.

The settlement proposals to which the commissioner of conciliation had obtained the assent of the wage-earners' organization were manifestly so fair that, although rejected by the employers' organization, the constituents of the latter could no longer be held in hostility to the wage earners. The strike, therefore, came speedily to an end.

MEDIATIONS REJECTED.

It is to be regretted that my report must refer to cases in contrast with those in which settlements were made. Although settlements have been the rule, unfortunately there have also been exceptions. This has been due to the unconciliatory disposition sometimes of the interests involved. Whenever mediation by this Department has been solicited by both sides to a labor dispute, or by one side and

acquiesced in by the other, a settlement has been effected in which the industrial interests of both sides have been fostered, industrial order conserved, and a spirit of industrial cooperation between employers and wage earners encouraged.

MINOR INSTANCES.

The iron molders' strike at Erie, Pa, affords a minor instance of the refusals to accept mediation. At the request of organizations representing the wage earners' side of that dispute, the Department of Labor sounded the organizations representing the employers' side, doing so with reference to the disposition of the latter toward considering possibilities of amicable adjustment. Although the accredited representative of this Department was courteously received, he was discouraged from making a formal offer of mediation.

Another minor instance was in connection with a labor dispute in the Becker and the Sturtevant factories near Boston. A strike over wages was under way. At the instance of organizations representing the wage earners involved, this Department offered mediation. But the employers, though courteous, were unyielding in their refusal to consider any other terms than unconditional resumption of work by the striking wage earners at their former wages.

Early in April, 1913, the Department was advised of an impending strike at San Francisco, Cal., of wireless telegraph employees of the Marconi Wireless Telegraph Co. of America. The reason given was insufficient wages. W. J. McConnell, of the Immigration Bureau, and G. W. W. Hanger, of the Bureau of Labor Statistics, were detailed as commissioners of conciliation, the former for service at San Francisco and the latter in New York. The company having refused to adjust the dispute through conciliation and also to enter into arbitration, the commissioners of conciliation were unable to effect a settlement and the impending strike began on the 22d of April, 1913.

A similar spirit in three labor disputes of magnitude and serious public concern has prevented the Department from establishing conciliatory relations that might have produced fair settlements. In each instance a strike is still maintained, to the detriment of the legitimate interests of both sides and to the disturbance of the orderly industrial relations which public interests require. One of those disputes is in the shops of the Pere Marquette Railroad system, another is the coal-mine strike in southern Colorado, the third is the copper-mine strike in northern Michigan. In each instance mediation was requested by the wage earners involved and rejected by the employers.

PERE MARQUETTE RAILROAD SHOPS.

The Pere Marquette Railroad is in the hands of receivers appointed by a Federal court. Between the receivers and certain wage earners formerly employed by them employment contracts with shop organizations were in force down to about May, 1913. In connection with proposed renewals of those contracts, which were already past the date of expiration by their terms, a labor dispute developed while the parties were in negotiation. In consequence of this dispute a strike began in one craft of one of the shops. The negotiations were thereupon broken off by the receivers. They professed willingness, however, to resume negotiations upon restoration of the status quo as it existed before the strike. The representatives of the wage earners concerned professed a corresponding willingness to restore the status quo and asserted that they were on the point of securing its restoration when the receivers imported a large body of men from "strike-breaking" labor agencies in Chicago. Upon the introduction of those men in the places of the striking craftsmen in the one shop the organized crafts in all the shops struck.

The striking wage earners still insist that the new men were "strike breakers" temporarily employed. The receivers deny that many were of that class and assert that all now there are wage earners in regular employment. It is, however, clear that a labor dispute of concern to the railroad, to a large number of trained craftsmen, and to the public has for seven months continued in connection with the shops of the Pere Marquette Railroad system.

When representatives of the striking wage earners solicited mediation by this Department, and the friendly offices of the Secretary of Labor were consequently offered to the receivers, his offers were rejected on the ground that no labor dispute existed in the shops. By this the receivers meant, as they explained, that their shops were fully equipped with competent craftsmen, between whom and themselves there was no controversy. They refused to recognize the strikers as having any longer any labor interest in their shop affairs. The fact ought to be stated, perhaps, that the striking craftsmen were citizens of the towns in which the shops are located, many of them owning their homes, and that the craftsmen who displaced them were strangers in those places. It should be stated also that at the time when the receivers informed the Department that there was no strike in their shops the imported men in the Grand Rapids (Mich.) shops were housed in box cars and tents on the grounds of the company outside of Grand Rapids, and "pickets" of the strikers were stationed at the town boundary.

When the receivers had finally refused the mediatorial offers of the Department, declining to enter into any kind of conciliatory conference, directly or indirectly, with their former wage earners, nothing

remained for the Department to do in the matter except to confer with the Federal court to which the receivers are responsible, and this it has done. Its acknowledgments are due to the district judge for his courtesy in the matter, but the dispute remains unadjusted.

COAL STRIKE IN COLORADO.

The coal strike in southern Colorado, the second of the larger labor disputes in which this Department has been asked by wage earners involved to mediate and in which its friendly offices have been rejected by the employers, could have been settled upon fair terms had the proposals of the Department of Labor for arbitration by an unbiased board chosen by mutual agreement been promptly accepted. The miners were willing, but the employers refused. No further concession was offered by the employers by way of conciliation than that hereafter they would obey the laws of the State of Colorado relative to mining and mine labor. This offer was declined by the miners as a conciliation offer, on the ground that an offer to obey laws intended for the protection of wage earners is not a concession in a labor dispute.

When the strike began there were approximately 13,000 coal miners in Colorado. Of those about 2,000 were working in the northern coal fields and about 3,000 are believed to have left the State. Between 90 per cent and 95 per cent of the remaining 8,000 went out on strike, and of those that struck about 5 per cent have returned to work. The remainder, nearly 7,000, are still on strike.

"Strike breakers" have been imported by the employers, some of them from outside the State. It is alleged by the miners that the imported men are hired under pretenses that there is no strike. This allegation, however, is denied by the employers. Many persons have been killed—probably 30 or 40 on each side—and guerrilla warfare continues. Each side places the responsibility for this on the other. Among citizens of Colorado other than those engaged in mining it is asserted that a feudal system holds sway over the coal regions, sometimes benevolent and sometimes otherwise; that the coal companies are absolute in their respective coal camps, not only as to industrial relations, but also as to social and political affairs; that in strike periods miners are frequently interfered with in their access to post offices, which are usually located on company property; and that armed guards have been employed by the companies to intimidate and coerce workers. The companies deny all this, their representatives making the countercharge that the miners have bought large supplies of firearms. Some of the miners admit purchasing firearms, but assert that they have done so solely for the purpose of defending their persons and their homes against the armed guards of the companies.

CALUMET COPPER STRIKE.

Third of the larger labor disputes in which mediation by the Secretary of Labor has been requested by the striking wage earners but rejected by their employers is the strike of the copper miners in northern Michigan. This strike began July 22, 1913. At that time the total number of employees was, in round numbers, 15,500, of whom 12,000 worked underground. Among those working above ground were about 1,100 in stamp mills. The stamp-mill workers have not joined in the strike, but they were compelled to quit work when the supply of rock for stamping and smelting gave out in consequence of the strike by the others. Of the total number employed (15,500), about 9,000 belonged to the Western Federation of Miners, and about 7,000 are still on strike.

Upon being requested by the wage earners' side of this dispute to mediate with reference to it under section 8 of the organic act of the Department of Labor, the Secretary of Labor detailed John A. Moffitt from the Bureau of Immigration, appointing him to act as commissioner of conciliation. John B. Densmore, Solicitor of the Department, was subsequently appointed commissioner of conciliation to supplement the work of Mr. Moffitt. Both commissioners proffered their friendly offices to the employers and made every reasonable effort at conciliation. It has been impossible, however, to bring the parties to an amicable understanding, principally because the employers have refused to consider any terms which do not include an agreement by the miners to renounce their labor organizations. The Department could not in fairness advise the miners to accept that condition against their will.

Three official reports have been made—one by Walter B. Palmer, of the Bureau of Labor Statistics, and one by each of the two commissioners of conciliation named above. Publication of Mr. Palmer's report, as well as Commissioner Moffitt's, was postponed, lest premature publication embarrass further efforts at conciliation. But upon receipt of Commissioner Densmore's report, all three were made public. The unyielding disposition of the parties to this dispute seemed at that time to have made friendly conciliation impossible. No reason remained, therefore, for further postponement of publication.

MISCELLANEOUS CASES.

Of the requests for mediation by the Secretary of Labor that were not acted upon, one related to a telephone operators' strike in progress at Boston in April, 1913; another to a strike in progress at the Draper mills, Hopedale, Mass., in May, 1913; a third to a dispute in the Corcoran Chemical Co., of Boston, and a fourth to a building trades' dispute in New York City. In none of these cases did the cir-

cumstances warrant efforts at mediation by the Department. In the garment makers' strike in Philadelphia, however, the Department acted in cooperation with the Pennsylvania department of labor and industry, at the latter's request, with a view to bringing the disputants to a friendly adjustment of their dispute by arbitration or otherwise, if possible. While progress was making toward an adjustment by mutual concessions, the wage earners involved, finding themselves unable to hold out longer, surrendered their claims.

REPORT OF THE SOLICITOR.

As the creation of the office of Solicitor of the Department of Justice for the Department of Labor was coincident with the creation of this Department, its work relates only to the period from March 4, 1913, to the close of the fiscal year. Following is a summary of the work for that period:

Legal opinions rendered, formal.....	22
Claims, workmen's compensation act, involving examination as to law and facts.	465
Contracts examined, approved, disapproved, drafted, redrafted, or modified.....	21
Leases examined, approved, or disapproved	2
Bonds, contract, examined, approved, or disapproved.....	4
Bonds, alien immigrants, examined, approved, or disapproved.....	307
Miscellaneous matters embracing everything submitted for advice or suggestion of the Solicitor or for the formulation of departmental action, not included in the foregoing items.....	28
Total number of matters disposed of	849

WORK OF THE BUREAUS.

BUREAU OF LABOR STATISTICS.

Created by act of Congress approved June 27, 1884, the Bureau of Labor Statistics (at first called the "Bureau of Labor," then the "Department of Labor," again the "Bureau of Labor," and finally the "Bureau of Labor Statistics," as previously explained in this report) was the nucleus for the congressional legislation which culminated nearly 30 years later in the creation of the present Department of Labor. The oldest bureau in this Department, the Bureau of Labor Statistics is with one exception also the largest.

ORGANIZATION AND OPERATIONS HERETOFORE.

When first organized, January, 1885, the Bureau of Labor was under the direction of Carroll D. Wright as Commissioner of Labor. By the act of its creation the commissioner was required to "collect information on the subject of labor, its relation to capital, the hours of labor and the earnings of laboring men and women, and the means of promoting their material, intellectual, and moral prosperity." Its

policy was formally declared (Feb. 4, 1885) soon after its original organization, in a letter addressed by the Commissioner of Labor to the Secretary of the Interior, as follows:

It should be remembered that a bureau of labor can not solve industrial or social problems, nor can it bring direct returns in a material way to the citizens of the country; but its work must be classed among educational efforts, and by judicious investigations and the fearless publication thereof it may and should enable the people to comprehend more clearly and more fully many of the problems which now vex them.

During the four years after its organization in the Department of the Interior, this bureau issued four annual reports covering the information collected and collated as required by its organic act. The act of Congress which at the end of that period made the bureau independent of any of the executive departments, under the name of the Department of Labor but without representation in the Cabinet, provided:

That there shall be at the seat of government a Department of Labor, the general design and duties of which shall be to acquire and diffuse among the people of the United States useful information on subjects connected with labor, in the most general and comprehensive sense of that word, and especially upon its relation to capital, the hours of labor, the material, social, intellectual, and moral prosperity.

Under that act, approved June 13, 1888, the Department of Labor, as this bureau was then named, issued 14 annual reports and 9 special reports, and between July 1, 1903, and July 1, 1912, as a bureau of the Department of Commerce and Labor, it issued 7 annual and 3 special reports. A number of miscellaneous reports, many of which were made in compliance with the special direction of Congress, have also been issued by the bureau.

In November, 1895, the department began the publication of a bulletin under an act approved March 2 of the same year. This bulletin was published bimonthly up to the close of the fiscal year ending June 30, 1912. Its general departments of information were as follows: (1) Results of original investigations; (2) digests of State labor reports; (3) digests of foreign labor and statistical documents; and (4) current decisions of courts interpreting labor laws or passing upon any subject involving the relations of employer and employee, and the reproduction at the end of each year of new laws affecting the interests of wage workers, whether enacted by Congress or by State legislatures.

The publication of the series of annual and special reports and of bimonthly bulletins having been discontinued at the close of the fiscal year ending June 30, 1912, a bulletin has since then been published at irregular intervals. Each number is devoted to one of a series of general subjects. Thus far these have been as follows: Wholesale prices, Retail prices and cost of living, Wages and hours of labor, Women in industry, Workmen's insurance and compensation

(including laws relating thereto), Industrial accidents and hygiene, Conciliation and arbitration (including strikes and lockouts), Labor laws of the United States (including decisions of courts relating to labor), Foreign labor laws, and Miscellaneous series.

As previously explained in this report the former Department of Labor became, July 1, 1903, a bureau of the Department of Commerce and Labor, its name being altered to "Bureau of Labor." Inasmuch, however, as no provision was made for any change in its general design and function, its work was continued along practically the same lines as formerly. The act approved March 4, 1913, establishing the present executive Department of Labor, which transferred the Bureau of Labor from the Department of Commerce and Labor to this new department, naming it the "Bureau of Labor Statistics," provides that all the powers and duties theretofore possessed by the Commissioner of Labor shall be retained and exercised by the Commissioner of Labor Statistics.

OPERATIONS DURING THE FISCAL YEAR 1913.

Reports published.—Having at the close of the last fiscal year been under the jurisdiction of the Department of Labor for less than four months, the annual report of the Bureau of Labor Statistics relates to the administration of the Department of Commerce and Labor for the eight months immediately preceding. It has to do with the administration of the Department of Labor only for the period from March 4 to June 30, 1913.

During the entire fiscal year, however, it has published (besides 17 bulletins) six volumes of reports—four of the "Report on Condition of Woman and Child Wage Earners in the United States,"¹ and two of the "Report on Conditions of Employment in the Iron and Steel Industry in the United States."² These six volumes embody portions of the results of two investigations made in compliance with acts of Congress. They complete the bureau's reports on the subjects investigated.

The first part of Volume XIII of the "Report on Condition of Woman and Child Wage Earners in the United States," entitled "Infant Mortality and Its Relation to the Employment of Mothers," is a statistical study of infant mortality in Massachusetts. It shows the relation between the existing mortality among infants and the industrial employment of mothers. The second part is a study of infant mortality in Fall River during one year, with special reference to the work of the mother before and after childbirth. Volume XIV, entitled "Causes of Death Among Woman and Child Cotton-Mill Operatives," is a study of the causes of death among cotton-mill operatives in three New England cotton-mill cities—Fall River,

¹ S. Doc. No. 645, 61st Cong., 2d sess.

² S. Doc. No. 110, 62d Cong., 1st sess.

Manchester, and Pawtucket. This volume, though dealing with all the causes of death, gives particular attention to tuberculosis and its relation to cotton-mill employment. Volume XVIII, entitled "Employment of Women and Children in Selected Industries," is a study of 23 industries largely employing women and children. It relates to the character and regularity of the work done in each industry, to competition between the sexes, to general sanitary conditions, and to the occupations, age, race, conjugal condition, hours of labor, and earnings of employees. Volume XIX, entitled "Labor Laws and Factory Conditions," is a study of legislation relative to the employment of women and children and to the health, safety, and working conditions of workers in factories. It also includes the results of an investigation of 563 establishments, representing 58 industries, on existing conditions with reference to matters commonly regulated by legislative enactment.

Volume III of the "Report of Conditions of Employment in the Iron and Steel Industry in the United States," entitled "Working Conditions and the Relation of Employers and Employees," is a study of the working conditions in American steel mills with special reference to the health and efficiency of the working force. The physical conditions and requirements of various occupations, the 7-day week, the 12-hour day, the relations of employers and workmen, working conditions and efficiency as affected by heat and by speed and severity of the work, overtime, irregularity of employment, etc., are among the subjects studied in detail. Volume IV, entitled "Accidents and Accident Prevention," is a statistical presentation of accident experience in the iron and steel industry. Causes of accidents, the nature of injuries, and the extent of disabilities are studied. There is also a presentation and an extended discussion of the development and organization of the safety movement and the methods of accident prevention in the industry.

Of the 17 bulletins issued during the fiscal year ended June 30, 1913, each is devoted to one of a series of general subjects. In the series "Wholesale prices," one bulletin continues the statistics annually published by the bureau on the subject of wholesale prices and covers the years 1890 to 1912, inclusive. In the series "Retail prices and cost of living" six bulletins present for each of 39 of the most important industrial cities in the various sections of the United States the retail prices of the principal articles of food, the retail prices of anthracite and bituminous coal for household use, and the net price of gas for household use.

The first bulletin of the series "Women in industry" is a study of the hours of labor, earnings, and duration of employment of wage-earning women in the District of Columbia. The second is a study of the working hours of women in the pea canneries of Wisconsin,

relating especially to the difficulty of adjusting hours of labor to legal standards during canning seasons.

Of four bulletins issued during the fiscal year in the series on "Workmen's insurance and compensation," the first is entitled "Care of tuberculous wage earners in Germany." The second is a reprint, preceded by a brief analysis, of the British national insurance act of 1911. The third translates and analyzes the Federal law of Switzerland relating to sickness and accident insurance; while the fourth translates, analyzes, and gives a history of the Imperial law of Germany relating to insurance of salaried employees.

The only bulletin issued during the fiscal year in the series "Industrial accidents and hygiene" is a study of lead poisoning in potteries, tile works, and porcelain-enameled sanitary ware factories in the United States, with appendixes showing conditions in Great Britain, Austria, and Germany.

Two bulletins were issued in the series "Labor laws of the United States." The first presents a review of labor legislation in the United States during 1912, together with the text of laws relating to labor enacted by the various States and by the United States during the year. The second reviews for 1912 the decisions of courts and opinions of the Attorney General affecting labor.

In the "Miscellaneous" series the one bulletin issued during the fiscal year presents such statistics of employment offices and unemployment in the United States as were available.

Reports transmitted.—In addition to the above reports and bulletins issued, several bulletins were sent to the printer before the end of the fiscal year, but not in time to complete the necessary proof reading. These are on "Retail prices, 1890 to April, 1913," "Sugar prices, from refiner to consumer," "Wages and hours of labor in the cotton, woolen, and silk industries, 1890 to 1912," "Wages and hours of labor in the lumber, millwork, and furniture industries, 1890 to 1912," "Employment of women in power laundries in Milwaukee," "Hygiene of the painters' trade," "Conciliation and arbitration in the building trades of Greater New York," "Prohibition of night work of young persons," "Ten-hour maximum working day for women and young persons," and "Employers' welfare work."

Reports in course of preparation.—Additional bulletins in course of preparation at the end of the fiscal year relate to prices; wages and hours of labor; workmen's compensation laws; dangers to workmen; hygiene; occupational diseases; accidents; mortality; industrial agreements; conciliation and arbitration; labor laws; factory inspection; civil-service retirement; and woman and child wage earners.

Compensation for injuries.—An especially important function of the Bureau of Labor Statistics relates to claims by employees of the

Government for injuries sustained in the service. This bureau was invested with that function by an act of Congress of May 30, 1908, which, as amended, provides:

Any person employed by the United States as an artisan or laborer in any of its manufacturing establishments, arsenals, or navy yards, or in the construction of river and harbor or fortification work or in hazardous employment on construction work in the reclamation of arid lands or the management and control of the same, or any employment under the Isthmian Canal Commission, or hazardous work under the Bureau of Mines or in the Forestry or Lighthouse Service, is injured in the course of such employment, such employee shall be entitled to receive for one year thereafter, unless such employee, in the opinion of the Secretary of Labor, be sooner able to resume work, the same pay as if he continued to be employed, such payment to be made under such regulations as the Secretary of Labor may prescribe.

That if any artisan or laborer so employed shall die during the said year by reason of such injury received in the course of such employment, leaving a widow, or a child or children under sixteen years of age, or a dependent parent, such widow and child or children and dependent parent shall be entitled to receive, in such portions and under such regulations as the Secretary of Labor may prescribe, the same amount for the remainder of the said year, that said artisan or laborer would be entitled to receive as pay if such employee were alive and continued to be employed: *Provided*, That if the widow shall die at any time during the said year her portion of said amount shall be added to the amount to be paid to the remaining beneficiaries under the provisions of this section, if there be any.

Under that act the Bureau of Labor Statistics received during the whole fiscal year 3,363 claims for compensation on account of injury and 58 claims for compensation on account of deaths of employees. This is an increase over the number received during the year ended June 30, 1912, of 351 claims on account of injury and a decrease of 15 claims on account of death. In addition to the cases received, 76 cases were pending at the beginning of the year, making a total of 2,492 claims for compensation considered during the year ended June 30, 1913. Of these 2,492 there were found to be established 2,324 claims for compensation on account of injury and 48 claims for compensation on account of death; 77 claims on account of injury and 12 claims on account of death were not allowed, and 29 claims on account of injury and 2 claims on account of death were pending at the end of the year.

In connection with the administration of the compensation act, provision is made for reporting injuries to all classes of employees of the Government which occur in the course of employment when the injury causes disability for one day or longer or results in death, without regard to the scope of the compensation act. The total number of accidents thus reported was 5,461, including 92 reports of accidental death, an increase of 622 reports over the preceding year, during which time 4,725 reports of injury and 114 reports of death were received.

The above totals do not include cases of injury to employees of the Isthmian Canal Commission, the administration of the law respecting

such employees having been transferred to that commission on March 3, 1911.

Several amendments and drafts of new bills have been introduced in Congress, none of which have been voted on.

BUREAU OF IMMIGRATION.

Among the four bureaus transferred from the former Department of Commerce and Labor to the Department of Labor by the act creating the latter, the largest and next to the oldest is the Bureau of Immigration. Its function is to execute our laws relating to the immigration and deportation of aliens and Chinese, and it is administered by the Commissioner General of Immigration under the direction and with the approval of the Secretary of Labor.

ORIGIN OF THE BUREAU.

Prior to the organization of this bureau, the various acts of Congress regulating immigration were administered by State officials under the direction and control of the Secretary of the Treasury, the expense being defrayed from a permanent appropriation provided for by Congress in 1882 and known as the "Immigrant fund." It was not until 1891 that the organization of this service as a Federal service exclusively was established. By an act of Congress of March 3 of that year the Federal office of Superintendent of Immigration was authorized and the duties theretofore performed by State officials under the immigration acts of Congress were transferred to inspection officers under his control. He and they, however, were placed under the direction of the Secretary of the Treasury, as the State officials who preceded them had been. The title of Superintendent of Immigration was changed in 1895 to its present form of Commissioner General of Immigration; and upon the establishment in 1903 of the Department of Commerce and Labor, the Commissioner General and his official force, then known as the Bureau of Immigration, were transferred to that Department. In 1906 the Bureau of Immigration, having been given charge of the administrative execution of the naturalization laws, a Division of Naturalization within the bureau was organized and the title of the bureau changed accordingly to "Bureau of Immigration and Naturalization." But a separate bureau having been made of the Division of Naturalization by the organic act of this Department, the Bureau of Immigration and Naturalization was by the same act restored to its original functions, reinvested with its original title of Bureau of Immigration, and, though remaining in charge of the Commissioner General, placed under the general jurisdiction of the Secretary of Labor.

The Bureau of Immigration, like the Bureau of Labor Statistics, not having come under the jurisdiction of the Department of Labor until March 4, 1913, the Commissioner General's report, like that of the Commissioner of Labor Statistics, relates to the administration of the Department of Commerce and Labor for the preceding eight months and to the administration of the Department of Labor for the last four months only of the fiscal year.

OPERATIONS OF THE BUREAU FOR FISCAL YEAR 1913.

Alien arrivals and departures.—The Commissioner General's report makes important disclosures regarding immigration. During the fiscal year, 1,197,872 immigrant aliens had entered the United States—an increase of 359,720 as compared with the 838,172 that entered during the preceding fiscal year. The months in which immigration was heaviest were September and October, 1912, and April, May, and June, 1913, the figures for which ranged from about 106,000 to 176,000 per month. In addition to the 1,197,892 immigrants, 229,335 aliens of the nonimmigrant class entered, making a total of 1,427,227, compared with 1,017,155 for the previous fiscal year. There departed from the country during the past year 611,924 aliens, of whom 308,190 were of the emigrant and 303,734 of the nonemigrant class. In the previous fiscal year 615,292 aliens left the country, of whom 332,262 were of the emigrant and 282,030 of the nonemigrant class. Therefore the actual increase in the alien population for the fiscal year 1913 was 815,303, compared with 401,863 for the fiscal year 1912.

The increases indicated by the above figures represent in percentages an increase of 43 per cent in immigrant aliens admitted to the country and 49 per cent in the resulting net addition to population, over the results shown by the statistics for the fiscal year 1912.

Ages, literacy, and financial condition of immigrants.—A few of the most important and interesting items of information contained in the statistical tables appended to the Commissioner General's report with respect to the 1,197,892 immigrant aliens admitted during the year are the following:

The ages of 986,355 ranged between 14 and 44 years, 147,158 were under 14, and 64,379 were 45 or over. Of the 1,050,734 aliens over 14 years of age, 269,988 could neither read nor write, and 5,326 could read but could not write. It thus appears that 26 per cent of the aliens over 14 years of age who were admitted to the country were illiterate.

Admitted aliens were able to show the inspection officers sums of money aggregating \$40,890,197, an average of about \$34 per person. There is no way to determine how much of this was sent to applicants by relatives or friends living in the United States. Amounts

of less than \$50 each were shown by 755,097 of the aliens, and amounts in excess of said sum were shown by 151,820; so that of those able to prove possession of money about 83 per cent had less than \$50 each.

Of the aliens entering, 811,151 claimed to have paid their own passage, while 375,947 admitted that their passage had been paid by relatives and 10,794 admitted that it had been paid by persons other than relatives. These figures, which must fall considerably below the fact regarding assistance, show that over 32 per cent of the aliens who entered the country were assisted to migrate.

Ages and periods of residence of departing aliens.—During the year 308,190 aliens emigrated from the United States. With respect to 46,646 of these no record could be procured concerning length of residence here, as they left across the Canadian border. However, it is shown that of the remainder, 182,985 had resided in the United States less than 5 years, 63,471 from 5 to 10 years, 10,803 from 10 to 15 years, 1,559 from 15 to 20 years, and 2,726 over 20 years. As to the ages, 13,245 were under 14 years of age, 264,137 were from 14 to 44 years of age, and 30,808 were 45 or over.

Sources of immigration.—The fact that the bulk of our immigration comes from countries of southern and eastern Europe is again demonstrated by the statistics, which moreover show a marked increase in that regard. Only 182,886 immigrant aliens (15 per cent of the total number) came from northern and western Europe during the past year, divided as follows: Belgium, 7,405; Denmark, 6,478; France, 9,675; German Empire, 34,329; Netherlands, 6,902; Norway, 8,587; Sweden, 17,202; Switzerland, 4,104; England, 43,363; Ireland, 27,876; Scotland, 14,220; Wales, 2,745. On the other hand, 896,553 (about 75 per cent of the total) came from eastern and southern Europe and western Asia, divided as follows: Italy, 265,542; Russia, (principally southern), including Finland, 291,040; Austria, 137,245; Hungary, 117,580; Greece, 22,817; Turkey in Europe, 14,128; Turkey in Asia, 23,955; Portugal, 14,171; Spain, 6,167; Bulgaria, Servia, and Montenegro, 1,753; Roumania, 2,155.

Exclusions of arriving aliens.—While as shown above immigration increased in the past year 43 per cent over the preceding year, the number of aliens excluded in 1913 exceeded the number excluded the previous year by only 24 per cent. Exclusions in 1912 amounted to 1.55 per cent of the applying aliens, and in 1913 to only 1.38 per cent. The totals are 19,938 for 1913 and 16,057 for 1912. It is noted by the Commissioner General that this failure to maintain in 1913 the proportion of exclusions of the previous year is due largely to the fact that, while immigration increased 43 per cent, the funds, employees, and facilities for the inspection of aliens were not increased in the least degree. This produced a situation in which it was neces-

sary for individual officers to attempt to do so much work that necessarily some of it was not well done.

As the causes for which aliens are refused admission are of special interest and importance, a table given in the report of the Commissioner General is quoted here as furnishing comparisons with reference to each principal cause for the years 1907 to 1913, both inclusive.

Cause of rejection.	1907	1908	1909	1910	1911	1912	1913
Idiots.....	29	20	18	16	12	10	18
Imbeciles.....		45	42	40	26	44	54
Feeble-minded persons.....		121	121	125	126	110	483
Insanity (including epileptics).....	189	184	167	198	144	183	198
Likely to become a public charge, including paupers and beggars.....	6,866	3,741	4,458	15,927	12,048	8,182	7,941
Afflicted with contagious diseases.....	3,822	2,847	2,308	3,033	2,735	1,674	2,457
Afflicted with tuberculosis.....		59	82	95	111	74	107
Physically or mentally defective.....		870	370	312	3,055	2,288	4,208
Criminals.....	341	136	273	580	644	592	808
Prostitutes and other immoral aliens.....	18	124	323	316	253	263	371
Procurers of prostitutes.....	1	43	181	179	141	192	253
Contract laborers.....	1,434	1,932	1,172	1,786	1,336	1,333	1,624

Summary of arrivals and exclusions.—The following statement summarizes the totals of arrivals, exclusions, and admissions of aliens for the fiscal year closing June 30, 1913:

Arrivals of aliens, July 1, 1912, to June 30, 1913.....	1,447,165
Detained for special inquiry.....	139,728
Admitted on primary inspection.....	1,307,437
Detained for special inquiry.....	139,728
Rejected by boards of special inquiry.....	22,850
Admitted by boards of special inquiry.....	116,878
Appeals to Secretary of Labor.....	7,002
Petitions to Secretary of Labor for bonding.....	101
Cases before Secretary of Labor.....	7,103
Rejected by Secretary of Labor.....	4,191
Admitted by Secretary of Labor:	
On appeal.....	2,164
On bonds.....	748
	2,912
	2,912
Aliens admitted.....	1,427,227
Aliens excluded.....	19,938
Total alien arrivals.....	1,447,165
Ratio of admission to arrivals..... per cent ..	98.62
Ratio of exclusions to arrivals..... do.....	1.38

Alien contract laborers.—An especially important function of the Bureau of Immigration with reference to the purpose of the Department of Labor is the administration of the laws excluding such aliens as migrate to this country under labor contracts.

Some of those laws antedate the Bureau of Immigration. Designed to prevent labor importations, they were in operation as long ago as when the immigration laws of Congress were administered by State officials. Their expressed object, as now enforced, is to exclude "contract laborers," who are defined by the law to be aliens "who have been induced or solicited to migrate to this country by offers or promises of employment, or in consequence of agreements, oral, written or printed, expressed or implied, to perform labor in this country of any kind, skilled or unskilled," unless skilled "labor of like kind unemployed can not be found in this country." They except, however, "professional actors, artists, lecturers, singers, ministers of any religious denomination, professors for colleges or seminaries, persons belonging to any recognized learned profession, or persons employed strictly as personal or domestic servants."

Regarding execution of the contract-labor exclusion laws, the report of the Commissioner General of Immigration for the fiscal year 1912 shows that 1,133 aliens were excluded because found to be contract laborers and 31 were arrested within the country and deported. For the past year the corresponding figures are 1,624 and 54, respectively.

Those figures afford, however, an inadequate index to the work which has been done by the Immigration Service in connection with the enforcement of such provisions of the immigration act as contemplate that aliens who have been induced or solicited to migrate by promises or assurances of employment shall be refused entry to the country (or deported therefrom if they enter without detection), and that persons and corporations securing employees abroad shall be punished. During the entire year a number of inspectors were assigned almost exclusively to this work. Through their efforts and those of officers assigned to immigration work in general, together with the cooperation of United States attorneys, it has been possible to investigate a large number of cases. Many such cases have been settled in the Government's favor, either through judgments obtained in the courts or by compromises made without actually instituting suits or bringing them to trial—though always with the consent of the court for the appropriate district. The full effect of the bureau's activity in the enforcement of the contract-labor provisions of law can not be measured in dollars nor in numbers of aliens excluded. The best result, perhaps, is the deterrent effect of a widespread feeling that the law can not be violated with impunity.

Expulsions of aliens.—Arrests and deportations of aliens resident in this country in violation of law are not confined to contract laborers. The same clause of the law under which contract laborers are arrested and deported upon discovery of their unlawful presence here, applies also to other aliens unlawfully resident in the United States. In

this respect the law requires that "any alien who shall enter the United States in violation of law, and such as become public charges from causes existing prior to landing shall, upon the warrant of the Secretary of Labor, be taken into custody and deported to the country whence he came, at any time within three years after the date of his entry into the United States." Another clause requires similar action regarding aliens guilty of sex immoralities in this country, regardless of the length of time they have been living here.

In the fiscal year closing June 30, 1913, 3,461 warrants of deportation under those provisions were executed, after granting hearings to the arrested aliens. During the previous year 2,456 warrants were so executed.

The aliens involved for the present fiscal year fall into the following general divisions as to causes of deportation: Members of the excluded classes at time of entry, 2,019; became public charges from causes existing prior to entry, 714; found to be prostitutes subsequent to entry, 116; supported by proceeds of prostitution, 61; entered without inspection, 464; members of the class created by the act of March 26, 1910, viz., the sexually immoral who had been in the country more than three years, 79.

Adding to the 3,461 expulsions on warrants above mentioned the 19,938 aliens excluded at ports of entry (to whom reference has been already made), there is a total of 23,399 aliens deported to country of origin on the various grounds specified in the statute.

Japanese and Korean laborers.—The last proviso of section 1 of the immigration law, imposing a per capita tax on aliens entering the United States, authorizes the exclusion by presidential proclamation of certain alien laborers. Following are the terms of that authorization:

Whenever the President shall be satisfied that passports issued by any foreign Government to its citizens to go to any country other than the United States, or to any insular possession of the United States, or to the Canal Zone, are being used for the purpose of enabling the holders to come to the continental territory of the United States, to the detriment of labor conditions therein, the President may refuse to permit such citizens of the country issuing such passports to enter the continental territory of the United States from such other country or from such insular possessions, or from the Canal Zone.

Pursuant to that provision of the immigration law, and in harmony with previous presidential proclamations, both by himself and by his immediate predecessor, President Taft issued on February 24, 1913, the latest proclamation on this subject.

Declaring therein that passports issued by certain foreign Governments to their citizens or subjects who are laborers, permitting them to proceed to countries or places other than the continental territory of the United States, were being used for the purpose of enabling the holders of such passports to come to the continental territory of the

United States, President Taft's proclamation ordered "that such alien laborers, skilled or unskilled, be refused permission to enter the continental territory of the United States," and directed the Secretary of Commerce and Labor, through the Bureau of Immigration and Naturalization, to make and enforce such rules and regulations as might be necessary to carry that proclamation into effect.

The rules and regulations made by the Department of Commerce and Labor through the Bureau of Immigration and Naturalization, pursuant to previous presidential proclamations of the same tenor, have been retained in force by the Department of Labor for the guidance of the Bureau of Immigration under the presidential proclamation last issued and referred to above. Those rules and regulations are still in force.

For a better understanding of the Commissioner General's report regarding the enforcement of this presidential proclamation, it should be stated that it contemplates the exclusion of Japanese and Korean laborers (with certain specified exceptions) from the mainland of the United States.

Reporting upon the subject for the entire fiscal year closing with June 30, 1913, and, therefore, with reference to the supervision during a part of that period by the Department of Commerce and Labor as well as to the supervision during the remaining part of the same period by the Department of Labor, the Commissioner General states that results are not as satisfactory as those shown by previous reports of the bureau. The chief difficulties appear to relate to exceptions in favor of Japanese immigrants coming to join members of their families residing here, and to apparent increases in admissions of women and girls.

The principal statistics on this subject follow: During the year 6,859 Japanese applied for admission to continental United States; of these 6,771 were admitted and 88 excluded. The corresponding figures for 1912 were 5,461, 5,358, and 103, respectively. Of the 6,771 above-mentioned, 6,696 were and 75 were not in possession of proper passports. Of those holding such passports, 6,655 belonged to classes entitled to such credentials under the proclamation and the understanding with Japan, and 41 were not entitled thereto. The said 6,655 consisted of 2,834 former residents, 3,069 parents, wives, or children of residents, 738 new arrivals who were nonlaborers, and 14 settled agriculturists. The 41 not entitled to passports were laborers. During the same period 5,081 Japanese applied for admission to Hawaii, of whom 4,901 were admitted and 180 debarred. Of those admitted 4,893 had and 8 had not proper passports. Of those holding such passports 4,729 were and 164 were not entitled thereto. Of the 4,729 entitled to passports, 1,275 were former residents and 3,454 were parents, wives, or children of residents. The

164 consisted of 144 nonlaborers and 20 laborers who were neither former residents nor parents or wives or children of residents.

Chinese immigration.—Administration of the Chinese exclusion laws, which by act of June 6, 1900, was placed under the charge of the Commissioner General of Immigration, subject to the supervision of the Secretary of the Treasury, has by subsequent acts passed successively under the supervision first of the Secretary of Commerce and Labor and then of the Secretary of Labor, where it now rests. The administration of this law is, however, still under the charge primarily of the Commissioner General of Immigration, who, reporting on his operations under it for the fiscal year—comprising 11 months of administration by his predecessor with 8 of supervision by the Secretary of Commerce and Labor, and 1 month of administration by himself with 4 of supervision by the Secretary of Labor—says:

To understand and appreciate how inadequate are the so-called Chinese-exclusion laws to prevent the entry of Chinese laborers to the United States, it is only necessary to analyze the statistics on this subject. * * * All possible under existing law is done to prevent the entry of Chinese not entitled to be in the United States; but despite these efforts Chinese laborers are constantly gaining admission, in the guise of "minor sons" of merchants, "students," "natives," or "sons of natives." There is no doubt that a considerable number of those shown * * * to have entered under these designations were, as a matter of fact, not what they claimed to be, but laborers desirous of earning a livelihood here despite the prohibition of the law. When the laborer is old or ignorant or otherwise unable fraudulently to assume a lawful status, smuggling across the land boundaries or from ships on which employed as "seamen" is resorted to. There seems to be no lack of money with which to carry out these schemes, however costly they may be. Under these circumstances it can readily be seen that the enforcement of the law becomes a very difficult matter. * * * When the limitations of the existing law are understood and appreciated, a review of the year's work is not altogether discouraging, notwithstanding the disclosures of the statistics regarding the admission of Chinese claiming American citizenship, * * * so many of which claims are known to be false and yet are not susceptible of disproof.

For the reasons stated in the foregoing quotation and for other reasons, the Commissioner General makes certain recommendations with reference to the Chinese-exclusion laws. Without at this time approving his recommendations, I respectfully direct attention to them for purposes of consideration.

Some of the most important and interesting statistics given in the Commissioner General's report are the following: During the year the applications for admission of 6,492 Chinese were considered. Of these Chinese 5,662 were admitted, 384 were deported, 1 escaped, and 445 cases were pending at the close of the fiscal year. The corresponding figures for the previous year were: Total applications, 5,886; admissions, 5,374; deportations, 400; died, 2; cases pending at the close of the year, 242.

Trachoma.—A contagious and dreadful disease of the inner surface of the eyelids which has prevailed in Egypt and Asia for centuries but was unknown to western peoples until the soldiers of Napoleon

Bonaparte returning from Egypt introduced it in Europe, trachoma is one of the most familiar of the diseases which necessitate exclusion of aliens from the United States. Regarded as exceedingly difficult to cure and requiring long treatment in isolation from unaffected persons, it has been almost uniformly a specific cause not only of exclusion but of denial of petitions for hospital treatment.

At one of the immigrant stations, however (the Philadelphia station located at Gloucester City, N. J.), the medical certificates of the Public Health Service have from time to time declared, as to immigrants affected with this disease and landing there, that their cases were curable within a few weeks if the "grattage" operation (about which there is much doubt among distinguished oculists) were performed. One of these certificates having come to the attention of the Department upon a petition for hospital treatment under section 37 of the immigration laws, presented by the husband and father (a declarant for American citizenship) of a Syrian woman and her minor child, the Department granted his petition.

Section 37 of the immigration laws provides that when the wife or minor child of a permanent resident of the United States, who is also a declarant for citizenship, shall have been sent for by him to join him, and upon arrival they are found to have any contagious disorder, they shall be held "until it shall be determined whether the disorder will be easily curable, or whether they can be admitted to land without danger to other persons." The same section further provides that "they shall not be either admitted or deported until such facts have been ascertained; and if it shall be determined that the disorder is easily curable or that they can be permitted to land without danger to other persons, they shall, if otherwise admissible, thereupon be admitted."

There is another provision (section 19 of the immigration laws) which also makes the question of the ease or difficulty of curing trachoma an important one for the exercise of some of the discretionary powers of the Secretary of Labor under the immigration laws. This provision is to the effect that no alien certified by the medical officers of the United States Public Health Service "to be suffering from tuberculosis or from a loathsome or dangerous contagious disease other than one of quarantinable nature, shall be permitted to land for medical treatment thereof in any hospital in the United States, unless with the express permission of the Secretary of Labor." Aliens coming under this section have also been certified from the Philadelphia station, at Gloucester City, N. J., by the Public Health Service there as having trachoma which could be cured within a few weeks.

In harmony, therefore, with the action of the Department under section 37 in the particular case mentioned above, the Department has admitted to hospital treatment several cases, some of them

arising under this section and some under the other. In doing so, it has acted in amicable cooperation with the Surgeon General of the Public Health Service, who has been kept informed of each case as it has arisen and of the disposition thereof.

Under that arrangement, six aliens reported as having arrived at the immigrant station mentioned above and as being afflicted with trachoma, have been admitted to hospital treatment in the Medico-Chirurgical Hospital in Philadelphia, where they have undergone, of their own volition, the "grattage" operation. All of these cases were duly reported by a board of three medical officers of the Public Health Service as having been cured within about four weeks after operation and as being free from contagion.

Continuing, however, to act in cooperation with the Surgeon General of the Public Health Service, this Department arranged with the aliens aforesaid for such observation from time to time during the six months following their discharge from the hospital as the Surgeon General required, the fear in the Health Service being that the disease may recur. The experimental test in these cases will be complete under the arrangements of the Department with the Surgeon General in the latter part of May, 1914. The Department will then be better able to judge whether or not trachoma is an easily curable disease within the meaning of section 37 of the immigration laws and the spirit of the policy of the Department in exercising discretion under section 19. In this connection it should be said, however, that the action in these cases has been experimental only and not for the purpose of altering the present prudent policy of the Department.

IMMIGRATION STATIONS.

For a satisfactory administration of the immigration laws, the character and condition of immigrant stations at ports of entry are of prime importance. So far, therefore, as the Department of Labor is permitted by law and equipped for the purpose, it aims to make these stations as much like temporary homes as possible. While regulation and exclusion, and therefore detention, are necessary in respect of immigration, it should be understood by all who participate in administering these laws that they are not intended to be penalizing. It is with no unfriendliness to aliens that immigrants are detained and some of them excluded, but solely for the protection of our own people and our own institutions. Indifference, then, to the physical or mental comfort of these wards of ours from other lands should not be tolerated. Accordingly, every reasonable effort is made by the Department, within the limits of the appropriations, to minimize all the necessary hardships of their detention and to abolish all that are not necessary.

DANGEROUS EXPLOSIVES NEAR ELLIS ISLAND STATION.

The immigration station at Ellis Island is endangered by the commercial handling of high explosives near by. For nearly three years this has caused much concern for the safety of the station and its occupants.

That feeling was first aroused by a destructive explosion in the winter of 1911 in connection with a transshipment of explosives at a railroad wharf. The explosion occurred at a point considerably farther from Ellis Island than the point at which shipments of explosives are now habitually made. It damaged the immigration station to the extent of more than \$25,000, and would probably have caused great loss of life but for the fortunate fact that on the day of the explosion there had been no arrivals of immigrants at the station. In consequence of this destructive explosion and of the fact that explosives are commonly transshipped within about half that distance from the station, efforts have been made to lessen the dangers of those transshipments to persons and property on Ellis Island. It seems to be very doubtful, however, from the voluminous correspondence and reports upon the subject on file in the Bureau of Immigration, whether any remedy is possible without congressional legislation. The persistent efforts of immigrant officials at Ellis Island to protect the station and its occupants from the dangers they anticipate appear from the bureau files to have been baffled.

Apparently this problem presents a double aspect. The menace to the Ellis Island station is (1) from vessels loaded with explosives and sailing the waters of the harbor in that neighborhood or anchoring there, and (2) from shipments at near-by docks.

As to the first aspect, vessels laden with explosives are reported as moving among passenger vessels in the harbor in reckless disregard of life and property, and subject to little if any legal control. It seems that although local authority ends with the piers on both sides—the authority of Jersey City on the New Jersey side, the authority of New York City on the New York side—the Federal Government has done little if anything in the interest of safety on the waters between, except to require displays of a red flag and the use of particular anchorage grounds. The northern limit for anchorage of vessels under the rules (June 19, 1911) of the Bureau of Navigation in the old Department of Commerce and Labor, is 6,500 feet southerly from Ellis Island. Experts state that no better location can be found for the purpose. Until 1902, when these grounds were selected, Ellis Island was endangered by the anchorage habitually in its immediate vicinity of vessels carrying explosives. Some vessels so loaded are said to anchor clandestinely in that vicinity even now. The danger, however, is no longer as a rule related to those at

anchor lawfully, unless it be in respect of the quantity of explosives they are allowed to carry and the precautions taken with reference thereto, but apparently the Secretary of Commerce and Labor (now the Secretary of Commerce) has no authority to regulate the size of cargoes nor their distribution. About that point, former Commissioner Williams of the Ellis Island station complained especially. He went so far regarding it as to propose that the Secretary exercise such authority indirectly by fixing more distant anchorage grounds for vessels neglecting to comply with regulations regarding the loading and storing of explosives which he might prescribe. Yet neither that suggestion nor any other appears to have met with favor, and Commissioner Williams seems to have been warranted in describing the Federal Government as helpless in the whole matter. An appeal to the Interstate Commerce Commission also fell through, because, although that commission has power to regulate the handling of explosives in interstate commerce over *land*, it is without this power in respect of interstate commerce over *water*. The act of Congress giving it the former power (act of May 30, 1908) was originally designed to give it the latter; but in the course of the passage of the bill through Congress, the words "or water" were struck out of the phrase "land or water." As another plan for finding a remedy for the danger of which he complained, Commissioner Williams recommended a board to report on the matter. He suggested that this board consist of an ordnance officer of the Army, one of the Navy, the supervisor of anchorages, and the chief engineer and superintendent of repairs. It was found, however, that the Secretary of Commerce and Labor had no power to appoint such a board, although he might instruct the supervisor of anchorages to confer with the other officers suggested and report the results of the conference.

As to the second phase of the problem, transshipments of explosives from cars to vessels at docks are made, as it would seem, perilously near to Ellis Island. Were a catastrophe to occur, responsible Federal officials could not explain their own inaction by referring to the vigilance, as it has been suggested that they may do, of local authorities. Such excuses, though usually accepted before disasters, are seldom admitted afterwards. This consideration was evidently taken into account by Commissioner Williams. For, upon finding all other remedial doors closed, he advised that legislation covering the whole subject be urgently sought of Congress. This Department adopts that advice and urges such legislation.

NEW STATIONS AT CHARLESTON, GALVESTON, AND NEW ORLEANS.

The new station at Charleston, although now completed, has not been put into service. The fact that no immigration comes to Charleston has made its occupation by the Government as an immi-

gration station useless. It is for the time, therefore, under the care of a watchman attached to the Bureau of Immigration. The new stations at Galveston and New Orleans, however, which also have been but recently completed, are in full service for immigration purposes.

NEW STATION AT BOSTON.

That the construction of a new station at Boston has been checked is to be regretted. After plans had been prepared by the Office of the Supervising Architect, it was found that the money available was not sufficient. The Secretary of the Treasury has been requested to endeavor to obtain a sufficient additional appropriation along with authority for transferring the existing appropriation to the control of the Treasury Department, so that the embarrassments and delays arising from having the work controlled by one department and the appropriation by another may be avoided.

PHILADELPHIA STATION.

A landing pier for the Philadelphia station, at Gloucester City, N. J., is being constructed, but a further appropriation will have to be made before the inspection building intended to be erected on the pier can be built.

RAILWAY BUREAU AT ELLIS ISLAND STATION.

Among the extra official organizations at the Ellis Island immigration station (New York Harbor) is a bureau for the railway distribution of immigrants after admission. Maintained by and at the expense of various railroads, but with the assent of the Immigration Bureau, it has been in operation for several years.

This railway bureau appears to have sprung out of a moral necessity for protecting immigrants from fraudulent practices at the port and in the city of New York in connection with their purchases of railway transportation. Landed without railroad tickets, though with money for purchasing them, they, in their ignorance of American travel, were at the mercy of transportation solicitors. This abuse led the ocean steamer lines into developing a system of selling tickets to their immigrant passengers from points of departure abroad to final destinations here. In order, however, that the railways of the United States might share proportionately the steamer companies left the routing of the immigrants to arrangements among the railroads themselves. The railway bureau was accordingly organized. Its services have been welcomed by the Bureau of Immigration in the interest of the immigrant. It exchanges railway tickets for certificates issued by the steamship lines showing that transportation has been paid not only across the ocean but by rail to the point of destination. But the steamship companies are understood to exact

of railroads \$1.50 per capita for each immigrant routed by the railway bureau over the respective railroad lines. The railroads have submitted to this exaction, apparently because they have understood that immigration traffic might be diverted from any of them refusing to pay it. Dissatisfaction has consequently arisen, so this Department is authoritatively informed, not so much perhaps from objection to the payment in and of itself as to the supposed questionable character of the whole arrangement with reference to congressional legislation against railway combinations.

A suggestion has consequently been made to the Department that the railway distribution bureau at Ellis Island might, advantageously to all concerned, be taken over by the Department of Labor, as part of the Immigration Service, under such cooperation with the Interstate Commerce Commission as may be feasible; the railroads, however, to continue to operate and financially to support the bureau as a voluntary affair, but payments of commissions to steamship lines to be discontinued. The subject is now under consideration by the Interstate Commerce Commission and this Department. Meanwhile, the situation is here called to the attention of Congress in anticipation of such requests for legislative action as may possibly be needed.

STATIONS AT INTERIOR PLACES.

An improvement in the care by the Federal Government of aliens about to be admitted into this country is contemplated by the act of Congress providing for immigration stations at interior places. Stations have been maintained heretofore only at ports or places of entry. From those points the immigrant, after being admitted, has been left by the Government to shift for himself; but under the interior-stations act immigrants will have Government protection until they are discharged from the interior station nearest their destination.

The act of Congress in question, "An act to extend the power of the Commissioner General of Immigration, subject to the approval of the Secretary of Commerce and Labor," now the Secretary of Labor, approved February 25, 1913, provides for the establishment and maintenance of "immigrant stations at such interior places as may be necessary," and, "in the discretion of the said Secretary," that "aliens in transit from ports of landing to such interior stations shall be accompanied by immigrant inspectors." Cost of transportation, however, is not to be borne by the Government.

Although that act provides for stations at all necessary places in the interior, the only appropriation it carried was for the "establishment and maintenance of such a station in the city of Chicago for the fiscal year ending June 30, 1914," the amount of this appropriation being \$75,000.

Difficulties were experienced in procuring suitable housing accommodations in Chicago, but these have been overcome. The station was located in November at the Newbury Building, on the corner of Wabash Avenue and East Ninth Street. Dr. P. L. Prentiss has been placed in charge. Further arrangements are now in progress for the safe conduct of admissible immigrants destined to points beyond Chicago from their port or place of entry to the station at Chicago, and thereafter until they are properly routed thence to their respective destinations. On their way to Chicago they will be in charge of immigrant officials—inspectors for men and matrons for women.

DIVISION OF INFORMATION.

No feature of the Bureau of Immigration as now organized could be better developed into an effective agency for promoting the fundamental purpose of the Department of Labor, as that purpose is defined by the organic act, than the Division of Information.

This division was established in 1907 as part of the then Bureau of Immigration and Naturalization (now the Bureau of Immigration) for the purpose of promoting a beneficial distribution of aliens admitted to the country, by collecting and disseminating among them trustworthy data concerning advantages offered settlers in different parts of the United States. There should be no perversion of that object to the prejudice of American wage earners by directing cheap alien labor to American labor markets already supplied with wage earners in excess of opportunities for their profitable employment. To do that would stultify the fundamental purpose prescribed for the Department of Labor by its organic act, namely, to "foster, promote, and develop the welfare of the wage earners of the United States." Nor need there be any stultification. It ought to be feasible to organize this division in such manner as to make it useful in high degree, alike to immigrants seeking employment, to employers in legitimate need of fairly paid wage earners, and to the whole body of the wage earners of the United States.

OPERATIONS FOR FISCAL YEAR 1913.

During the fiscal year ending June 30, 1913, 19,891 applications by as many persons have been made to this division for information. Of those persons, 2,552 were native-born citizens of the United States, 2,411 Germans, 2,268 Polish, 1,306 Swedish, and 1,125 Spanish. The applications for information pertaining to farm work were 4,465 and to common laboring work 5,344. As in former years, many of the applicants represented groups of persons who could not apply individually.

The above figures do not include those applying by mail for information concerning purchase, rental, or character of lands. Such

inquiries have been turned over to the State or groups of States concerning which information is sought. The inquirers are so informed, and are supplied with a copy of the division's bulletin of Agricultural Opportunities relating to the localities indicated by them.

Tables II and III of the division's report show that 5,025 persons were directed to employment in 32 different States. Of this number, 1,920 were directed to farm labor and 2,482 to common labor of other kinds. Of those who went direct to places of employment, Poles and Germans were in the lead among foreigners. Americans, however, furnish the largest number of any nationality thus benefited.

The division is of opinion that the sending of money and prepaid tickets abroad to defray the expense of aliens emigrating from Europe is a cause for much of the crowding of already overpopulated industrial centers. The charge has been made that labor agents enlist the aid of aliens in this country to induce relatives or alleged relatives to come here in violation of the immigration laws. It is a difficult fact to prove, but a belief prevails that padrones and parasitical labor-brokerage agencies do in such ways evade the laws against labor importation. Those agencies are also often charged with fraudulent labor transactions across State lines. They are accused of making false representations to both employers and wage earners in order to secure brokerage fees. To the wage earners they are said to misrepresent labor conditions, and to employers to sell (through collusion with foremen) the same workmen over and over again. The division recommends in this connection that every private employment agency and every person engaged in directing wage earners to places of employment across State lines be subjected to its supervision in order that parasitical labor agents may be distinguished from those engaged in legitimate industrial service. The Department concurs in that recommendation.

BUREAU OF NATURALIZATION.

When the title of the original Bureau of Immigration was altered to Bureau of Immigration and Naturalization, authority to administer the laws for the naturalization of aliens through the courts was vested in it, these laws being placed under the special charge of a division of the bureau to which that function was particularly assigned. Upon the creation of the Department of Labor, however, the organic act, restoring the Bureau of Immigration and Naturalization to its original name and purpose, raised the Division of Naturalization to the rank of a bureau, placing it in charge of a Commissioner of Naturalization and under the jurisdiction of this Department.

OPERATIONS FOR THE FISCAL YEAR 1913.

Reporting for the fiscal year upon the administration of the naturalization law, the Commissioner of Naturalization observes that

the record is one of increasing harmony and unity of work between the courts and the Federal naturalization officers, and that with the passage of time the courts and the public are realizing more clearly the value of Federal supervision in developing uniformity of operation.

Each year has shown an increase in the number of aliens declaring their citizenship intentions, in the number petitioning for naturalization and also in the number admitted to citizenship. During the fiscal year closing June 30, 1913, 181,632 declarations of intention were issued, and 82,017 certificates of citizenship granted—an increase in certificates over 1910 of more than 100 per cent. The average number of alien declarants for the first six years, excluding the first nine months of the operation of the law, has annually been 164,500 in round numbers, or, approximately, 17,000 less than shown for the fiscal year under review. During the year, 92,908 petitions for naturalization were heard by the various courts exercising naturalization jurisdiction; and of these, 10,891, or 11.72 per cent, were denied for various causes. The principal grounds for the dismissal of these petitions were: Ignorance 1,586, immoral character 522, failure to comply with requirements of law necessary for the court to acquire jurisdiction 4,641, want of prosecution 3,166, on motion of petitioner 303. The remaining dismissals were upon various grounds.

The naturalization fees received and deposited in the Treasury during the past year amounted to \$350,716.60. As the cost of the administration of the naturalization law was \$290,026.20, the excess of receipts over expenditures was \$60,690.40.

An average of approximately 164,500 declarations of intention filed during the past six fiscal years indicates not far from 150,000 petitions for naturalization, it being estimated that approximately 14,000 declarants will not perfect citizenship within the seven-year period.

Estimates have been submitted for an increase in the clerical force of this bureau. The volume of work, already beyond the capacity of the employees heretofore provided, in spite of their frequently working overtime, is steadily increasing.

Legislation is desired also which will unify the requirements for naturalization of certain special classes of aliens, those who have been honorably discharged from service in the Navy, the Army, the Marine Corps, the Army transport service, and other vessels of the United States, and those who are or have been seamen in the American merchant marine.

CHILDREN'S BUREAU.

ORIGIN AND FUNCTIONS.

Established by act of Congress approved April 9, 1912, this bureau is the most recent in legislative origin of the four that were transferred from the Department of Commerce and Labor to the Depart-

ment of Labor. Its functions are prescribed by the second section of that act as follows:

That the said bureau shall be under the direction of a chief, to be appointed by the President, by and with the advice and consent of the Senate, and who shall receive an annual compensation of five thousand dollars. The said bureau shall investigate and report to said Department upon all matters pertaining to the welfare of children and child life among all classes of our people, and shall especially investigate the questions of infant mortality, the birth rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of children, employment, legislation affecting children in the several States and Territories. But no official, or agent, or representative of said bureau shall, over the objection of the head of the family, enter any house used exclusively as a family residence. The chief of said bureau may from time to time publish the results of these investigations in such manner and to such extent as may be prescribed by the Secretary of Labor.

OPERATIONS.

Appointed as the first chief of this bureau by the previous administration, Miss Julia C. Lathrop has been retained as such by the present administration. Her official report for the last fiscal year, which (like the reports of the other bureaus that have come under the jurisdiction of this Department) has to do with the supervisory administration of the Department of Commerce and Labor for the first eight months of that year, represents the administration of the Department of Labor only from March 4 to June 30, 1913. The purposes and activities of this bureau are summarized from its report as follows:

Established as a result of the belief that the Federal Government should assist in the protection and betterment of children, by investigations and by popularization of useful information, just as the various bureaus of the Department of Agriculture have for years assisted in the betterment of farm plants and animals, the Children's Bureau was directed to investigate and report "upon all matters pertaining to the welfare of children and child life." As children under 16 years of age constitute about one-third of the total population, and as the welfare of that one-third is intimately bound up with the welfare of the other two-thirds, it is obvious that during the first year of life, the bureau, with the limited appropriation of a new enterprise, could do little more than organize its small staff of fifteen persons, map out its field, and meet as far as possible the numerous requests which immediately began to flow in from organizations and private individuals for information upon every conceivable subject connected with children.

The bureau has, however, prepared and published during the year four bulletins (in addition to a brief circular relating to its establishment)—the first upon the need for more complete birth registration as a foundation for all statistics of childhood; the second upon the baby-saving campaigns which are being conducted by cities all over the United States; the third upon prenatal care; and the fourth upon the number of children in the United States, with their sex, age, race, nativity, parentage, and geographic distribution. Several other bulletins, including one containing the results of the first field investigation of infant mortality and one on child-labor legislation, are nearing completion or ready for the press, and still others are begun or definitely planned. Infant mortality recommended itself as the subject of the first field investigation, not only because it is a subject which is challenging the attention of

the entire civilized world, but because it was practicable to approach it by studying one community of manageable size at a time, with the staff and appropriation at command. For various reasons Johnstown, Pa., was chosen as the first community to be studied. Records of all the babies born there within a year were copied, a schedule was prepared with a view to securing, not merely a history of the baby's life, but a picture of the social, civic, and industrial conditions of its family, and women field investigators were sent out to the homes where they obtained histories of the first year of life for 1,551 babies born in Johnstown during that year.

A review of child-labor legislation, containing a summary and the text of all the laws regulating the employment of children in the 52 political divisions of the United States, is practically completed, and a study of the methods of issuing work certificates to children in use in the different States is well under way. The employment certificate is a method both of opening the doors of industry to the child and of protecting his life, health, and morals during his earliest years at work; and the degree to which various systems actually give such protection is therefore one of the most significant questions connected with the child-labor problem. Another study which has been begun is of records relating to positions held and work done by children during the period, usually from 14 to 16, when they are obliged to have work certificates.

The bulletin on the number of children in the United States already published is but the first part of a statistical handbook, the second part of which, on the growth of the child population, is begun. Other parts of this handbook will deal with child labor, school attendance, and defective, dependent, and delinquent children. The bulletin on prenatal care is also the first of a series on the health of children, and a second bulletin of this series, covering the care of infants, is in progress. Still another piece of work undertaken by the bureau is a test of the completeness of birth registration, which has been urged by the Census Bureau as calculated to stimulate public interest and make more complete the fundamental vital statistics of the country. This work is being carried on in cooperation with women's clubs in the different States.

A library on child welfare, composed largely of current literature, pamphlets, clippings, and data not yet in print, derived through correspondence, was obviously one of the first needs of the new bureau, not only for use in the preparation of its publications, but more particularly for use in furnishing information concerning the latest developments in work for children all over the world. Such a library, of a distinctive type, for the bureau's own use and for that of the public, has been begun and is progressing as rapidly as possible with available funds.

It is obvious that the Children's Bureau has as yet made but a small beginning toward meeting the pressing needs felt by those who urged its establishment and reflected continuously and insistently in its own widely scattered correspondence. Much of its work during this first year was necessarily exploratory in character and much time was necessarily devoted to securing a staff and equipment and to organizing and laying plans for future work. With a force of only 15 persons, some of whom were not secured until February, 1913, and with only about \$4,000 for contingent expenses of all sorts, including traveling expenses of field agents, etc., it was obviously impossible for the Children's Bureau to make elaborate investigations and to issue numerous valuable publications. It is believed, however, that the first year's work, as well as the vital importance and wide scope of the field assigned to the Children's Bureau, justifies a request for a considerable enlargement of its staff and for a considerable increase in its appropriation, in order that it may be able to push to completion as rapidly as possible work already begun, to undertake other constructive studies, and adequately to perform the duties assigned it by law.

OFFICE OF THE SECRETARY.

CHIEF CLERK.

Considerable financial embarrassment attended the initial work of organizing the Department of Labor.

APPROPRIATIONS.

The equipment and appropriations of the four bureaus transferred by Congress to the jurisdiction of the Department of Labor came over with them; but as their use was limited to the bureaus, respectively, they were not available for general departmental functions. For those functions the Congress that created the Department provided no equipment at all, nor did it make any financial provision. Until two months after its creation the Department was wholly dependent upon the generosity of the Department of Commerce for departmental quarters and furniture and for clerical, messenger, and elevator service. Even the salaries of departmental officers were unprovided for. That embarrassing situation was remedied as to salaries by act of May 1, 1913. But this act made no provision for subordinate clerks nor for meeting other working expenses in the Office of the Secretary. In those respects, therefore, and in some others, the Department continued in a state of dependence upon the Department of Commerce until the close of the fiscal year. The Department of Commerce transferred to the Department of Labor May 8, 1913, the sum of \$3,013.38 to cover salaries for 12 clerks, 2 assistant messengers, 1 laborer, and 1 messenger boy. It added from the same appropriations \$12,228.10 for contingent expenses (of which \$2,293.32 was expended for the Office of the Secretary) and \$35,047.40 for printing and binding (\$3,212.20 of which was expended for the Office of the Secretary) for the remainder of the fiscal year.

EXPENDITURES.

Adding to the sums thus transferred the sum of \$7,066.66 (being that portion of the amount directly appropriated to the Department of Labor by the act of May 1, 1913, for the salaries of administrative officers), it appears that the expenditures for the Office of the Secretary (consisting of the Secretary and his working force, the Assistant Secretary, the Chief Clerk, and the Disbursing Clerk, with their several assistants, the Division of Publications and Supplies, the Appointment Division, and the Solicitor and his assistants) were for the fiscal year closing June 30, 1913, only \$15,585.56.

The portions of appropriations turned over for disbursement on behalf of the four bureaus as of March 4, 1913, a considerable

share of which was to meet obligations previously incurred, were as follows:

Bureau of Labor Statistics.....	\$184, 002.36
Bureau of Immigration.....	1, 988, 745.71
Bureau of Naturalization.....	88, 295.90
Children's Bureau.....	12, 058.57
Total.....	2, 273, 102.54

From all sources, therefore, the aggregate appropriations for the Department and its constituent parts to the close of the fiscal year 1913 were \$2,330,458.08.

RECEIPTS.

The receipts of the bureaus of the Department amounted for the entire fiscal year closing June 30, 1913, to \$5,167,185.73, and for so much of the period in that year as those bureaus were under the jurisdiction of this Department, to \$2,123,486.41. They are tabulated as follows:

	Entire fiscal year.	Mar. 4 to June 30, 1913.
Bureau of Immigration:		
Head tax.....	\$4, 721, 500.00	\$1, 954, 098.00
Fines.....	63, 289.00	19, 807.00
Court costs.....	214.60	202.75
Exclusive privileges.....	14, 235.60	4, 382.44
Telephone rentals and sale of ice.....	2, 165.19	792.87
Bureau of Naturalization:		
Receipts of naturalization fees under the provisions of the act of June 29, 1906 (34 Stats., 596).....	350, 716.60	140, 528.50
Proceeds of sale of condemned Government property, forfeited bonds in Chinese cases, etc.....	15, 064.74	3, 674.85
Total.....	5, 167, 185.73	2, 123, 486.41

NET APPROPRIATIONS.

As those receipts of the Department's bureaus were by law covered into the Treasury without deduction, it may be readily seen by the following tabulation that the total appropriations available for the use of the Department exceeded the total receipts by only \$206,971.67 during the first four months of its existence:

Total appropriations available for operation of the Department and its bureaus from Mar. 4 to June 30, 1913.....	\$2, 330, 458.08
Receipts of the bureaus of the Department for the same period covered into the Treasury.....	2, 123, 486.41
Excess of appropriations over receipts.....	206, 971.67

DEPARTMENT QUARTERS.

One of the first difficulties confronting the Department was the problem of departmental quarters. The organic act permitted "any office, bureau, or branch of the public service transferred to the

Department of Labor" and at that time "occupying rented buildings or premises," to "still continue to" occupy them "until other suitable quarters" were "provided for its use"; but no space at all was allowed for the Office of the Secretary and its divisions. Partly to meet this difficulty, two rooms of the Bureau of Immigration in the Willard Building were set aside. But this building, then occupied by both the Department of Commerce and the Department of Labor as it had been before by the Department of Commerce and Labor, was already overcrowded. The Commissioner General of Immigration, therefore, moved into extremely narrow quarters in order to make room for the Secretary. It was in such crowded conditions that the Department began its work.

This congestion continued until the removal, about the middle of October, of the Department of Commerce from the Willard Building to its new building at Nineteenth Street and Pennsylvania Avenue NW. Even then the embarrassment did not end. Congress having assumed that the four bureaus of the Department of Labor could be afforded space in that building, which had been erected for the accommodation of the former Department of Commerce and Labor and all its constituent parts, only \$5,000 for rent of offices for the Office of Secretary during the remainder of the fiscal year ending June 30, 1914, was appropriated by the act of October 22, 1913. This was not enough for the emergency. Occupancy of the new building by both Departments would have interfered with plans of the Department of Commerce, which contemplated occupying the entire premises to the exclusion of the Department of Labor and all its bureaus. Further embarrassments also arose. The leases which the Department of Commerce, as sole successor to the Department of Commerce and Labor, had acquired for the building in which its executive offices and their branches and those of this Department were quartered, ran only until October 15, 1913. There was danger, therefore, that the Department of Labor, with but \$5,000 available for rent for the remainder of the fiscal year from October 15, 1913, to June 30, 1914—the amount appropriated by the act of Congress last cited—would be wholly without office accommodations.

This difficulty was finally overcome through a contract with the owners of the Willard Building supplemented by a concession from the Department of Commerce. The former Department of Commerce and Labor having paid an annual rental of \$11,830 for the Willard Building, the owners of that building agreed to accept from this Department for the remainder of the fiscal year (from the end of the lease to June 30, 1914) the total amount at the disposal of the Department for rent, namely, \$5,000. Acceptance of that offer, however, would have accomplished little but for a concession by the Department of Commerce, which provided temporary quarters for one

of the bureaus of the Department of Labor—the Bureau of Labor Statistics. Excepting its Bureau of Labor Statistics, the Department of Labor and all its constituent bureaus are now housed in the Willard Building.

But its stay there beyond the close of the present fiscal year will necessitate an appropriation for rent alone of \$11,830, the owners of the Willard Building having served notice that they will demand this rental for the term beginning July 1, 1914. Even with that amount appropriated for rent the Department will again be embarrassed for office accommodations unless the Bureau of Labor Statistics is permitted to remain in the building of the Department of Commerce; and the Department of Commerce, needing the whole building for its own uses, hesitates at offering that permission.

The logical and businesslike way of disposing of this matter, pending the erection of a proper public building for the Department of Labor, would be to confer upon the Department authority similar to that already granted the Department of Commerce. It should be empowered to enter into a five-year lease of premises adequate to its uses and those of all its bureaus, the premises to be selected by the Secretary of Labor at an annual rental of \$24,000. Under such authority the Department of Labor would be able to secure quarters adapted to the transaction of its business and reasonably appropriate to the dignity of an executive department of the Federal Government.

DISBURSING OFFICE.

The following table shows total amounts of all annual appropriations for the various bureaus transferred from the Department of Commerce and Labor to the Department of Labor under the act approved March 4, 1913; appropriations for public works in the Immigration Service of the Department; special appropriations; appropriations for the Office of Secretary of Labor and for printing and binding transferred from the Department of Commerce and Labor; and appropriation made for salaries (Office of Secretary of Labor) by act approved May 1, 1913.

Object of appropriation.	Annual appropriations, 1913.	Appropriations for public works.	Special appropriations.	Total.
Bureau of Labor.....	\$280,373.67			\$280,373.67
Bureau of Immigration.....	2,603,604.45	\$276,000.00	\$2,367.70	2,881,972.15
Bureau of Naturalization.....	260,260.00		7.41	260,267.41
Children's Bureau.....	21,936.45			21,936.45
Office of Secretary of Labor.....	122,308.14			22,308.14
Allotment for printing and binding.....	² 35,047.40			35,047.40
Total.....	3,223,530.11	276,000.00	2,375.11	3,501,905.22

¹ Includes \$15,241.48 transferred from Department of Commerce and \$7,066.66 appropriated for salaries, Office of Secretary of Labor, by act of Congress approved May 1, 1913.

² Transferred from Department of Commerce.

The following statement shows the balances of appropriations transferred to the Department of Labor in accordance with the provisions of the act approved March 4, 1913, creating the Department of Labor:

BUREAU OF LABOR STATISTICS.

Salaries, Bureau of Labor:	
1911.....	\$2, 235. 28
1912.....	1, 822. 22
1913.....	35, 097. 86
Miscellaneous expenses, Bureau of Labor:	
1910.....	1, 300. 00
1911.....	3. 33
1912.....	1, 167. 17
1913.....	23, 488. 29
Library, Bureau of Labor:	
1911.....	3. 81
1912.....	. 52
1913.....	500. 22
Medical examination of injured employees:	
1911.....	2, 751. 00
1912.....	2, 826. 66
1913.....	2, 806. 00
International Congress on Social Insurance.....	10, 000. 00
Commission on Industrial Relations, 1913.....	100, 000. 00
	184, 002. 36

BUREAU OF IMMIGRATION.

Salaries, Bureau of Immigration and Naturalization:	
1911.....	3, 961. 29
1912.....	3, 861. 71
1913.....	47, 415. 66
Expenses of regulating immigration:	
1911.....	12, 692. 41
1912.....	56, 046. 67
1913.....	1, 049, 736. 64
1910-11.....	10, 363. 19
1909 and prior years.....	593. 07
Expenses of regulating immigration (special fund).....	2, 408. 89
Immigrant stations:	
Boston, Mass.....	310, 178. 98
Charleston, S. C.....	3, 063. 49
Ellis Island, N. Y.....	280, 116. 91
Galveston, Tex.....	11, 824. 40
New Orleans, La.....	70, 894. 54
Philadelphia, Pa.....	81, 495. 68
San Francisco, Cal.....	43, 569. 91
Trust fund, Rosa Goldman.....	500. 00
Unclaimed funds, Jei Bei Ota.....	2. 27
Refund of fine, Rafael Subira.....	26. 00
	1, 988, 745. 71

BUREAU OF NATURALIZATION.

Special examiners, etc., Division of Naturalization, 1911.....	\$4. 12
Additional assistants to clerks of courts in naturalization cases.....	1,496. 95
Miscellaneous expenses, Division of Naturalization:	
1911.....	1,625. 42
1912.....	3,110. 28
1913.....	82,059. 04
Total.....	<u>88,295. 90</u>

CHILDREN'S BUREAU.

Salaries, Children's Bureau, 1913.....	12,058. 57
Grand total.....	<u>2,273,102. 54</u>

Disbursements.—Disbursements by the Disbursing Clerk, Department of Labor, from May 6, 1913, to June 30, 1913, arranged according to items of appropriations, are shown in the following table:

BUREAU OF LABOR STATISTICS.

Salaries, Bureau of Labor, 1913.....	\$12,144. 44
Miscellaneous expenses, Bureau of Labor, 1913.....	7,477. 48
Medical examination of injured employees, 1913.....	62. 00
Library, Bureau of Labor, 1913.....	38. 78
Total.....	<u>19,722. 70</u>

BUREAU OF IMMIGRATION.

Salaries, Bureau of Immigration and Naturalization, 1913.....	17,063. 04
Expenses of regulating immigration:	
1913.....	345,943. 23
1912.....	392. 27
1911.....	969. 86
Immigration stations:	
Ellis Island, N. Y.....	1,254. 73
Galveston, Tex.....	1,321. 49
New Orleans, La.....	11,837. 27
Philadelphia, Pa.....	13,150. 20
San Francisco, Cal.....	14,239. 53
Total.....	<u>406,171. 62</u>

BUREAU OF NATURALIZATION.

Miscellaneous expenses, Division of Naturalization, 1913.....	24,732. 74
Miscellaneous expenses, Division of Naturalization, 1912.....	1. 06
Total.....	<u>24,733. 80</u>

CHILDREN'S BUREAU.

Salaries, Children's Bureau, 1913.....	3,205. 00
Grand total.....	<u>462,036. 27</u>

Disbursements made by the special disbursing agent, Department of Labor, during the period from March 4, 1913, to and including May 5, 1913:

Bureau of Labor Statistics.....	\$26,314.73
Bureau of Immigration.....	483,778.76
Bureau of Naturalization.....	38,794.63
Children's Bureau.....	4,273.33
	553,161.45

Balances of appropriations.—The following unexpended balances of appropriations were turned into the surplus fund June 30, 1913, in accordance with the act of June 20, 1874 (18 Stat., 110–111):

Salaries, Bureau of Labor, 1911.....	\$2,235.28
Miscellaneous expenses, Bureau of Labor, 1910.....	1,300.00
Library, Bureau of Labor, 1911.....	3.81
Medical examination of injured employees, 1911.....	2,751.00
Salaries, Bureau of Immigration and Naturalization, 1911.....	3,961.29
Immigrant station, Charleston, S. C.....	890.40
Expenses of regulating immigration:	
1909 and prior years.....	593.07
Special fund.....	2,408.89
1910.....	8.75
1910–11.....	10,363.19
1911.....	11,719.09
Special examiners, etc., Division of Naturalization, 1910.....	4.21
Miscellaneous expenses, Division of Naturalization, 1911.....	1,624.15
Total.....	37,863.13

The total disbursements made for the Department of Labor and the bureaus transferred thereto during the whole fiscal year 1913 are as follows:

By the Disbursing Clerk, Department of Commerce, for bureaus transferred, for the period July 1, 1912, to Mar. 4, 1913.....	\$2,454,821.05
By special disbursing agent, Department of Labor, for the period Mar. 4 to May 5, 1913.....	553,161.45
By Disbursing Clerk, Department of Labor, for the period May 6 to June 30, 1913.....	462,036.27
By special disbursing agents in the Immigration Service.....	26,802.48
Claims settled by the Auditor for State and Other Departments.....	4,291.57
Total disbursements.....	3,501,112.82

DIVISION OF PUBLICATIONS AND SUPPLIES.

In the interest of good administration the work incident to handling the Department's publications and that pertaining to the handling of its supplies (which in the former Department of Commerce and Labor was performed in two distinct branches of the Secretary's Office) was consolidated in one division, known as the Division of Publications and Supplies.

During the period from March 4 to June 30, 1913, the force of this division was to a large extent dependent for assistance upon the employees of the corresponding offices in the Department of Commerce. But for this assistance it would have been a physical impossibility to dispose of the business with even reasonable dispatch. As a consequence, the division is not now in a position to state with any degree of accuracy the number of publications which were compiled and distributed exclusively by its employees.

DISTRIBUTION OF PUBLICATIONS.

In accordance with the terms of section 8 of the act of August 23, 1912, the work of addressing, wrapping, and mailing the Department's publications is being performed in the Government Printing Office. In so far as this system pertains to the distribution of publications from the permanent mailing lists, the Department has no objection to offer. But much delay and confusion attend the handling of individual requests in which prompt delivery is of first importance. A strict compliance with the terms of the statute requires that these requests, as well as the others, be filled through the Government Printing Office. Under existing arrangements, the Department upon receipt of a telephonic or other request from a Member of Congress or other person is put to the necessity of preparing a properly addressed frank, which must be subsequently transmitted to the Government Printing Office, there to be affixed to the envelope or package in which the document is to be mailed. The procedure is unnecessarily circuitous. Much time and effort would be saved by a modification of the law so as to permit the Department in such cases to mail copies of the publications direct.

Considering the difficulties under which this division has labored (from lack of sufficient clerical force and of such conveniences as suitable means for the transportation of mail, supplies, and publications between the Department, the steamship wharves, and the Government Printing Office) excellent results have been accomplished.

PRINTING AND BINDING.

On May 1, 1913, there was transferred to the Department of Labor, in accordance with the act of that date, the sum of \$35,047.40 for printing and binding during the remainder of the first fiscal year. Orders covering this amount were placed with the Government Printing Office prior to June 30. Inasmuch, however, as parts of those orders, amounting to \$4,374.76, were not completed prior to June 30, this amount was carried over as an obligation against the appropriation for the fiscal year 1914. The Department has therefore en-

tered upon its second fiscal year with a fictitious adverse balance of \$4,374.76.

For printing and binding for the Department of Labor during the fiscal year 1914 the Department of Commerce transferred \$84,000, which was apportioned as follows:

Office of the Secretary.....	\$875	Naturalization Service and natu-	
Bureau of Labor Statistics.....	32,500	ralization examiners.....	\$13,925
Bureau of Immigration.....	5,100	Children's Bureau.....	9,300
Division of Information.....	2,300		
Immigration Service.....	18,600	Total.....	84,000
Bureau of Naturalization.....	1,400		

It is evident from the foregoing table that only \$875 was available for printing and binding for the Office of the Secretary during the entire fiscal year. Up to November 30, 1913, there had been expended for this work in the Office of the Secretary \$1,792.21, and the estimated cost of uncompleted and unbilled work amounted to \$842.49, making a total of \$2,634.70. There is available to meet these obligations but \$875. It requires no argument to show that the amount provided is utterly inadequate for publishing the information which it is the duty of this Department to disseminate, and to furnish necessary stationery and blank forms.

PURCHASE OF SUPPLIES.

The experience of the Department of Labor in purchasing supplies has been necessarily brief. It is, however, the consensus of opinion among its employees in that work, drawn largely from their experience in the former Department of Commerce and Labor, that the schedules of the General Supply Committee furnish a most efficient and economical method of accomplishing the purpose for which they were devised. In several particulars, nevertheless, this method might be improved. The procedure is well adapted to the purchase of articles of common use throughout the departments. Questions continually arise, however, as to authority to purchase articles not in universal use independently of the schedules. The doubt is perhaps too frequently resolved against this authority, resulting in a tendency to include in the schedules many items not intended to be incorporated therein. Action by Congress indicating with greater precision the latitude allowable in purchasing supplies independently of the schedules is desirable.

APPOINTMENTS.

PERSONNEL.

The Department appreciates the hearty cooperation and special energy of its employees. Its limited force, so disproportionate to its work, could not have served its needs at all but for the "one for

all and all for one" spirit with which they have faced every difficulty. With all their good will and industry, however, many duties which by law devolve upon the Office of the Secretary can not be efficiently performed, so inadequately is it equipped. Nor is the lack of assistants confined to the clerical force. There are too few watchmen for proper supervision of the building, and no proper provision has been made for either elevator service or the care of boilers and machinery. The few employees available for those duties have consequently been obliged to serve overtime and to shift from one kind of work to another. A messenger boy, for instance, who is obliged to leave his regular duties a considerable part of each day in order to relieve the only telephone operator the Department is provided with, must devote the remainder of the day to operating one of the two elevators, nobody being at any time available to run the other. Such irregularities are unjust to employees and can hardly fail of being prejudicial to the service.

The accompanying table shows, by bureaus, the number of positions in the Department on November 1, 1913. The figures do not include emergency employments of guards, interpreters, stenographers, etc., in the field force of the Bureau of Immigration, of which there were 577.

Bureau.	Statutory.	Nonstatutory.	Total.	In District of Columbia.	Outside District of Columbia.
Office of the Secretary.....	47	-----	47	47	-----
Bureau of Labor Statistics.....	71	23	94	71	23
Bureau of Naturalization.....	54	72	126	54	72
Bureau of Immigration.....	53	1,665	1,718	53	1,665
Children's Bureau.....	15	-----	15	15	-----
Total.....	240	1,760	2,000	240	1,760

The following tables indicate the number of changes in the personnel throughout the executive offices and bureaus of the Department during the fiscal year ended June 30, 1913:

APPOINTMENTS.

Bureau.	Permanent.				Temporary.	Total.
	Competitive.	Excepted.	Unclassified.	Total.		
Office of the Secretary.....	18	3	-----	21	-----	21
Bureau of Labor Statistics.....	1	-----	-----	1	8	9
Bureau of Immigration.....	202	16	15	233	37	270
Bureau of Naturalization.....	9	-----	-----	9	3	12
Children's Bureau.....	-----	-----	-----	-----	-----	-----
Total.....	230	19	15	264	48	312

SEPARATIONS AND MISCELLANEOUS CHANGES.

Bureau.	Separations.					Miscellaneous changes.
	From permanent positions.				Total.	
	Competitive.	Excepted.	Unclassified.	Total.		
Office of the Secretary.....						16
Bureau of Labor Statistics.....	3			3	4	7
Bureau of Immigration.....	32	17	12	61	19	80
Bureau of Naturalization.....	10			10	2	12
Children's Bureau.....						
Total.....	45	17	12	74	25	99

The table following shows the number of transfers to and from the Department during the period March 4 to June 30, 1913:

Bureau.	From—				To Department of Agriculture.	Total.
	Department of Commerce.	War Department.	Treasury Department.	Total.		
Office of the Secretary.....	17			17		17
Bureau of Labor Statistics.....						
Bureau of Immigration.....	1	3	2	6	1	7
Bureau of Naturalization.....		1		1		1
Children's Bureau.....						
Total.....	18	4	2	24	1	25

The following table shows the presidential positions in the Department on June 30, 1913. That marked with an asterisk (*) does not require confirmation by the Senate.

Position.	Compensation per annum.	Tenure.	Authority.
Secretary of Labor.....	\$12,000	Indefinite.....	Act of Mar. 4, 1913.
*Assistant Secretary of Labor.....	5,000	do.....	Do.
Commissioner of Labor Statistics.....	5,000	4 years unless sooner removed.	Do.
Commissioner General of Immigration.....	5,000	Indefinite.....	28 Stat., 780.
Commissioner of immigration at— New York, N. Y.....	6,500	4 years unless sooner removed and until successor is appointed.	28 Stat., 391.
Baltimore, Md.....	4,000	do.....	Do.
Boston, Mass.....	4,000	do.....	Do.
Philadelphia, Pa.....	4,000	do.....	Do.
San Francisco, Cal.....	4,000	do.....	Do.
San Juan, P. R.....	3,600	do.....	Do.
Seattle, Wash.....	4,000	do.....	Do.
Chief of the Children's Bureau.....	5,000	Indefinite.....	Act of Apr. 9, 1912.

PROMOTIONS.

In recognition of the fact that no institution or organization can rise above the spirit of its working force, the Department has been governed by the merit rule in making appointments and promotions.

It looks first of all to general fitness and special efficiency. But doubts of the advisability of its undertaking any further work in the way of keeping efficiency records, even if that were possible with its limited clerical force, have been raised in the Department by recent acts of Congress contemplating a transfer of that kind of work from the departments to the Civil Service Commission. Resort is consequently had in this Department, when the relative merits of employees are under consideration with reference to promotion, to the ratings compiled by the former Department of Commerce and Labor in 1911. This method is not ideal. Since that time many employees have entered the service of the Department; as to others, their usefulness must have improved or declined. The Department trusts that in the near future it will either be equipped for compiling a new record of efficiency ratings or be systematically supplied with data by officials whose special duty it may be made to keep the necessary records. Such ratings, though not conclusive, are of great help in determining preferences for meritorious service.

SUPERANNUATION AND RETIREMENT.

That no plan has been devised for retiring superannuated employees—public servants who have given the best years of their life to Government work—is to be regretted. It is conceded freely that due regard for economy and efficiency demands their displacement by younger and more active employees. Yet it is evident that responsible officials should not be embarrassed regarding old employees whose efficiency has declined, by the alternative of retaining them in the service or of ruthlessly dismissing or demoting them.

ESTIMATES.

DEPARTMENT QUARTERS.

Elsewhere in this report mention is made of embarrassments in securing office accommodations. Provision for that purpose is still so slender as to warrant the Department in urging Congress to make an appropriation for rent sufficiently large to enable the Department to secure appropriate quarters. The recommendation in this particular, which is made under the head of "Office of the Secretary" (subtitles "Chief Clerk" and "Department Quarters"), is respectfully urged upon the attention of Congress.

MEDIATION EXPENSES.

The most important new duty delegated to the Department concerns appointments of commissioners of conciliation in labor disputes. That function, both in its possibilities and in its actual execution, is considered elsewhere in this report. The suggestion may be added that no more judicious appropriation could be made than an ample fund for carrying forward this particular service.

SALARIES.

In no division of the Secretary's Office has the number of employees been sufficient. To meet this situation in part, details of clerks from bureaus have been resorted to, but that has impaired the efficiency of those branches and caused arrearages of their work. This condition calls for prompt relief. In order that the Department may handle its business with reasonable dispatch it is urgently recommended that the additional force requested for the Office of the Secretary in the estimates of appropriations for the fiscal year 1915 be allowed.

CONTINGENT EXPENSES.

Meager appropriations have put the Department under pressure to meet miscellaneous expenses incident to the operation of its building and the furnishing of such office accessories as stationery, furniture, filing cabinets, etc. For a considerable time the Secretary had to use a borrowed desk, and similar methods were resorted to for equipping other officials of the Department. Even as late as the close of the calendar year many supplies deemed indispensable to the transaction of ordinary private business could not be secured. To reduce operating expenses to a minimum every effort has been exerted and only requisitions for such furniture and supplies as are absolutely necessary are being honored. Notwithstanding this policy of retrenchment and economy, however, it is extremely doubtful if the Department will be able, within the available deficiency appropriation, to meet its obligations during the remainder of the second fiscal year.

BUREAUS.

The estimates submitted on behalf of the different bureaus represent pressing needs. They are the result of a series of conferences between the head of the Department and the respective bureau chiefs, and after careful consideration of the different lines of work with the performance of which the Department and its subordinate bureaus are charged.

IMMIGRATION.

In this bureau the increasing volume of work has necessitated an estimate for four additional clerks and one messenger.

The Immigration Service at large is greatly handicapped. New immigration stations have been constructed pursuant to law and placed in operation at Philadelphia, Pa., New Orleans, La., and Galveston, Tex.; and, although funds were especially provided for purchase of land and erection of buildings, no provision was made for operating expenses, not even for the salaries of necessary employees. The result is additional burdens upon an appropriation

made upon estimates that did not include those new projects. Moreover, the act approved March 26, 1910, which made important amendments to the immigration laws in reference to the arrest and deportation of aliens identified with the "white-slave" traffic, has not been and can not be enforced in the manner contemplated by the statute, the appropriation available for that object being insufficient to defray the heavy cost. With the purpose of meeting these conditions, an estimated increase of \$360,000 in the appropriation for expenses of regulating immigration has been submitted. The action of Congress on that estimate will determine in degree the efficiency of the bureau in the execution of statutes relating to immigration.

An estimate aggregating \$812,200 has been made for proposed improvements to immigration stations. Charged with heavy responsibility in caring for aliens seeking admission to our country, the Immigration Service should not be driven to the use of inadequate or unsanitary quarters.

Receipts from the Immigration Service exceed the appropriations by about \$1,934,496.98, the receipts for the fiscal year ended June 30, 1913, being \$4,816,469.13 and the appropriations only \$2,881,972.15. When this excess of 67.12 per cent of receipts over appropriations is considered, an increase of appropriations would seem to be clearly within reason. The per capita tax on immigrants was not intended for general revenue purposes, but for the purpose of contributing to the expense of administering the immigration laws. When, therefore, the receipts from the administration of those laws largely exceed the appropriations, the appropriations should be increased if, as is the case, additional appropriations are needed for efficient administration.

NATURALIZATION.

In the Bureau of Naturalization the number of petitions and other naturalization papers filed has increased during the past year out of proportion to the appropriation for the bureau and its field officers. The number of clerks estimated for will be barely adequate to the requirements of the work. The increase of \$25,000 asked for field officers represents a smaller percentage of increase in the appropriation than the increase in the volume of their work. It is to be noted, moreover, that the receipts of this bureau largely exceed its expenditures.

LABOR STATISTICS.

The estimates of the Bureau of Labor Statistics for the fiscal year ending June 30, 1915, call for an increased appropriation of \$28,160 for "Salaries" and of \$24,000 for "Miscellaneous expenses," making a total increase of \$52,160. These estimates provide for 16 additional

employees. The necessity for extending the "wage" and "retail price" work of this bureau is imperative. Both sides to nearly every important mediation or arbitration case arising within the United States during the past year called for the bureau's compilations on those subjects. The value of this data will be much enhanced if the bureau is equipped with sufficient funds to enable it to make a budget and cost-of-living survey.

A thorough study of workmen's compensation and insurance is demanded by the country. Twenty-five States have already passed workmen's compensation or workmen's insurance laws. The Bureau of Labor Statistics should have an expert in charge of the collection and publication of the latest information concerning the experience in this field of the various States of the United States and the countries of the world.

This bureau has published two reports on industrial education and vocational training. Further investigations should be conducted in that field and up-to-date information published.

CHILDREN'S BUREAU.

With the small force of employees and the inadequate appropriations available for its use, the Children's Bureau has been able to do little more than make a survey of its field of possible work. But the work it has already done is a permanent tribute to its usefulness. Its bulletin on Prenatal Care is especially noteworthy. This bulletin has by its circulation demonstrated the great popular demand for publications that will help the individual parent. And the reception accorded its preliminary report on Baby-Saving Campaigns has revealed a wide interest in the possibilities of community action in maintaining children in a normal state of health. Increased appropriations would enable this bureau to complete within a reasonable time its important investigation into infant mortality, the value of which will be greatly lessened if extended over a long term of years. They would also enable the bureau to meet a very general demand, disclosed in its correspondence, for more knowledge regarding the child's entrance into industrial life, with especial reference to adequate training for work and to the development of efficiency. It is evident that industrial and vocational training must be considered by the bureau in any of its studies on the employment of children having practical results in view. With additional appropriations the bureau would begin the study of other important agencies and methods for the promotion of child welfare, especially the operation of juvenile courts and of mothers' pension laws. The work planned by the Children's Bureau for the immediate future falls naturally into three groups—one dealing with questions concerning children for whom public agencies must, for one reason or another, assume

responsibility; another dealing with the employment of children; and still another dealing with hygiene and sanitation so far as they affect children.

RECOMMENDATIONS.

PLAN FOR DEPARTMENTAL ORGANIZATION.

No specific authority was conferred upon the Department of Labor by its organic act other than its authority with reference to mediation in labor disputes and to the functions of the four prior existing bureaus that have been placed under its jurisdiction. But in addition to the general declaration which formulates the purpose of the Department, namely, to "foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment," the organic act did provide for the development of a specific plan for realizing that broad purpose. By section 10 the Secretary of Labor is required to "investigate and report to Congress a plan for coordination of the activities, duties, and powers of the present bureaus, commissions, and departments so far as they relate to labor and its conditions, in order to harmonize and unify such activities, duties and powers, with a view to further legislation to further define the duties and powers of such Department of Labor." As that report is required by a different section of the organic act and for a different purpose from the section and the purpose for which the annual report is required, it is understood in reference to plans of departmental organization that Congress contemplated a special report. Such a report will in due time be presented.

LABOR LEGISLATION.

The use of firearms, in a species of private warfare in connection with labor strikes, calls for serious consideration. Groups of men on both sides, without military or police authority for it, have used firearms with fatal effect in the coal strike in southern Colorado. These arms and the ammunition have doubtless been procured through interstate commerce; and many of the armed men are said to have been imported into Colorado from other States through a business concern engaged commercially across State lines in supplying corporations with an armed and trained private soldiery or police in numbers running into hundreds and even thousands. In connection with the Pere Marquette strike in Michigan, armed guards, furnished by agencies in other States supplying men to take the place of local strikers, accompanied those men to Grand Rapids. They were there turned back by the United States marshal under instructions from the district judge. In the Calumet copper-mining region, armed

guards under contract with the employers were forwarded to the locality by agencies in other States. In view of the facts in these three cases, and of the well-known fact that detective agencies are to a greater or less extent engaged commercially in supplying groups of armed men across State lines, the Department recommends that Congress take action within its constitutional limitations to regulate this business in the interest of public peace and order.

That Congress take such action is not a new suggestion. It was made in connection with the labor troubles at Homestead, Pa., 21 years ago, and reported upon in the House of Representatives by the Judiciary Committee of the House at that time. The report (including the minority report) which was submitted to the House of Representatives February 7, 1893, is Report No. 2477 of the Fifty-second Congress, second session. A summary of the circumstances described in the majority report at pages xiv and xv makes it appear that the conditions now prevalent in this particular are much the same as those of that time. The summary is as follows:

The committee has elicited the fact from various sources that there is among the people of the country, especially with labor organizations, very great complaint against the use of Pinkerton guards or watchmen, and hence an appeal is made to Congress to pass a law regulating or prohibiting the same. They are professional detectives and guards or watchmen, and in the latter capacity may properly be characterized as a sort of private military or police force. They have been employed frequently by corporations in the case of strikes and other labor troubles until there exists an irreconcilable hostility between them and labor organizations. Nothing is better calculated to incite the latter to deeds of violence than for Pinkerton men to be brought in contact with them.

Your committee believes that the practice of employing Pinkerton watchmen or guards by corporations in case of strikes and labor troubles has grown very largely out of the sloth and dilatoriness of the civil authorities to render efficient and prompt protection to persons and property in such cases; but to allow, without the consent of the State, and in the first instance, corporations to employ such agencies as the Pinkerton watchmen in large numbers drawn from other States, is well calculated to produce irritation among the strikers, frequently resulting in hostile demonstrations and bloodshed. Such action upon the part of a corporation or association should never be allowed without the consent first obtained of the State in which the trouble occurs. A contrary course tends to bring the local civil authority into contempt, whereas its employment, its officers appreciating their duty, is the surest guaranty for the protection of life and property and the maintenance of the public peace. Exasperated strikers will not molest or resist the officers of the State, when, under exactly similar circumstances, they will assault the watchmen or guards hired by the corporation.

By the minority report, the same circumstances are thus summarized at pages xvii and xviii:

To the detective business was first added that of supplying private watchmen, and, latterly, armed men as guards in case of strikes and lockouts. The business is well organized and has facilities for employing, or rather enlisting, all the force it may be called upon to supply. With its officers, corps of drilled men, and supply of arms it is in the nature of a militia force under the control of private individuals to be hired out to whomsoever may be able and willing to engage it. A number

of corporations engaged in the transportation of interstate commerce and the carrying of United States mails have, on several occasions, employed Pinkerton guards. The Union Pacific, the Chicago, Burlington & Quincy, the Lake Shore, and the New York Central Railroad companies are among the number that have employed and used such guards while so engaged. At the times of such employment said corporations were encountering serious opposition in the operation of their roads and in the running of trains, from their striking employees. The guards were armed, and, in most if not in all cases, were sworn in as deputy sheriffs and clothed with police powers. In a few instances serious collisions took place between them and the striking employees or their friends.

Whether the employment of these guards provoked breaches of the peace or caused the destruction of property is a question upon which no definite opinion can be expressed. Wherever they were employed there were excitement and danger to both life and property, and whether their presence checked or increased the hazards is a matter more of speculation than of judgment.

The frequent conflicts that have taken place within the last few years between the employees of corporations and their managers and the use of Pinkerton guards by the latter, are matters of serious concern; and the minority, while unable to answer the inquiries of the House specifically, are of the firm conviction that such a policy is likely, at any moment, to result in the loss of both life and property.

The existence of such an organization as the Pinkerton agency, composed of men of superior courage but doubtful discretion, to be transported from State to State in time of bitterness and excitement, to be employed either as peace officers or as guards to private property, may well excite feelings of apprehension and danger. The importation of a foreign force into any community, except in the manner prescribed by law, is dangerous to the peace and good order of society. No principle in our form of government is more firmly embedded in the hearts of our people than that of domestic administration. The citizens of every community are imbued with the same spirit of local government and view with great jealousy the presence of any other than the force which they have provided for the protection and preservation of their rights and properties.

If from any cause the local authorities are unable to preserve the peace and enforce the laws, an appeal to the State should be made and if the State is too feeble then to the strong arm of the Federal Government, whose duty it is to guarantee to every State in the Union a republican form of government. The presence of a force not called into action in the regular way, even if clothed with the semblance of authority, is more likely to impress the peaceable citizen, much more the excited workman, with the conviction that his home, his rights, and his liberties are being invaded, than that the laws are being upheld for their preservation.

Neither the majority, however, nor the minority of the Judiciary Committee at that time saw their way clear to recommend congressional legislation against the evil they so clearly described and emphatically deplored. On this point the opinion of the majority, given at pages xv and xvi, was as follows:

Congress has the constitutional right to regulate interstate commerce, but has no right to say what citizens shall be employed by the carriers of interstate commerce nor the amount of wages which shall be paid by such carriers to any of their employees; nor what kind of a uniform, if any, they shall wear; nor whether they shall bear arms openly, which is not unlawful; or, in short, that while Congress may regulate, facilitate, and protect interstate commerce, it has no right to intermeddle with the private contracts and acts of the companies engaged in such transportation between them and their employees. To assume this extent of jurisdiction would necessarily imply the

right to create, to prescribe, and to destroy the carrier companies engaged in interstate commerce. Congress may confer jurisdiction of a judicial character on the courts, but can not direct their judgments. * * * Your committee, finding Congress without constitutional authority to legislate as hereinabove set forth, respectfully suggest that it rests with the States to pass such laws as may be necessary to regulate or prohibit the employment of Pinkerton watchmen or guards within their respective jurisdictions.

To the same effect was the opinion of the minority at pages xviii and xxiv, although their comment is directed to the "practice of sheriffs and other peace officers in accepting as a posse" the armed men whom the Pinkerton agency supplied to corporations involved in strikes. Having this point directly in view, the minority said:

The evil, however, serious as it is, is one over which the Federal Government has no jurisdiction or control. It is a matter wholly within the reserved powers of the State; and if the people in the exercise of their local sovereignty fail to protect themselves, no duty or responsibility whatever can attach to the General Government. * * * The minority of the committee is of the opinion that the evils disclosed by the investigation are entirely beyond the reach of Federal power, and that remedies, if any can be devised, must originate with the State governments.

It would not seem to be so clear at this day as it appeared to the members of the Judiciary Committee of the House of Representatives 21 years ago, that Congress has no constitutional authority over this subject in its interstate characteristics. The view appears no longer to prevail in congressional legislation that interstate commerce relates to traffic in commodities only. This is plainly true of the so-called "white slave" legislation of Congress. As its powers with reference to interstate commerce are thereby recognized by Congress, there would seem to be no reason now why the transportation of private troops, or private police, or armed guards, or armed mobs, whether by employers or strikers, from one State to another under commercial contracts, should not be regarded as coming fully within the scope of congressional authority over interstate commerce. Though Federal control of such interstate traffic was regarded as unconstitutional in 1893, it would appear by analogy to be regarded as within constitutional sanction now. The evil being still great enough to demand such congressional legislation as may be constitutional, I hereby commend the subject to Congress for consideration.

CONCLUSION.

The Department of Labor as an executive department devoted to the just interests of wage earners has been established as one of the results of general industrial progress. Owing to well-known developments in production, the relation of employer and wage earner is no longer personal or individual. Theirs is now usually a relationship between groups of employers on one side (such as corporation stock-

holders) and groups of their respective workmen on the other. Employers act collectively through their own chosen agents—corporation managers, factory or mine superintendents or foremen, labor brokers, or the like—who, in hiring laborers, represent collective financial interests. It is obvious that this method of employment, generally necessary for success in modern industry, may give to employers great contractual advantages over wage earners. Unless wage earners also act collectively through their own agents, they are often at a practical disadvantage.

Employers who act collectively through their agents in hiring wage earners are often averse to dealing with the agents of wage earners who collectively offer their services. They desire to contract with wage earners individually. It is upon this point that labor disputes frequently spring up and become acute.

In most instances in which employers accord to workmen practical recognition of the right of collective bargaining which they themselves exercise, fair relations are maintained. Even under such conditions, it is true, unhappy disputes arise. Whether the bargaining be collective or individual, a conflict of interests may tempt either party to make exactions which the other can not concede. If employers yielded to every demand of wage earners, their business would be wrecked; if wage earners always accepted the terms that employers offer, they would suffer great injustice.

In any circumstances, differences must be expected to arise. In such cases the Department of Labor, through public agents experienced in controversies of like character, might possibly find a common ground for agreement which the disputants, in their eagerness for advantage or in the heat of their controversy, had overlooked. Difficulties of adjustment would, of course, be greatly increased if either party refused to deal or bargain with the other. But the Department of Labor, from growing experience and accumulated knowledge and skill, might learn how, even in these more difficult cases, to appeal with pacifying and prosperity-promoting effect, to the good citizenship and the wise self-interest of both parties. And, though no common ground for compromise were discovered, the Department of Labor might still be able to stimulate such conciliatory spirit as might exist on both sides, sufficiently to bring them, each none the less convinced of the righteousness of his own cause, to a manly agreement to submit their unreconciled differences to arbitration.

In any of these three ways, the welfare of wage earners could be fostered while the prosperity of employers and the peace and good order of society at large were conserved. Amicable settlements between the parties themselves without mediation are manifestly first in the order of preference. Mediation comes next. Arbitration third. But any of the three is preferable to strikes or lockouts.

In its brief experience in adjusting labor disputes this Department has demonstrated that they can be settled to the profit of all interests whenever both sides are fairly disposed, though they may have been widely separated in their negotiations at the start. And these demonstrations have been made under greater embarrassments than the Department need be hampered with in future. Properly equipped, it should be able to make mediation progressively popular with both the employing and the wage-earning interests of the country.

The possibilities of public service by such a Department are not limited, however, to settling labor disputes. Besides this work, and the administration of the immigration and naturalization laws and of statistical investigations of labor problems and the problems of child life, much may be done in the way of modifying industrial conditions that provoke distressing controversies. With the sympathetic cooperation of Congress, the Department of Labor can effectively serve industrial interests, not only without injury to any but with benefit to all.

Respectfully submitted.

W. B. WILSON.
Secretary of Labor.

REPORT

OF THE

INTERSTATE COMMERCE COMMISSION.

WASHINGTON, D. C., *December 15, 1913.*

To the Senate and House of Representatives:

The Interstate Commerce Commission, pursuant to the requirements of the act to regulate commerce, presents its twenty-seventh annual report to the Congress.

The work of the Commission has increased rapidly and considerably in all its branches. It has become almost impossible for the members of the Commission to absent themselves from the Commission's headquarters to carry on investigations and take testimony in cases at points other than Washington, as was formerly the custom. It is necessary, therefore, that the commissioners be relieved of many details in connection with the less important cases in order that they may be able to more fully consider the more intricate matters and cases of major importance. It is believed, however, that the Commission has full authority to so arrange its work and forces as to secure this relief without additional legislation, and plans to that end are now being formulated.

INFORMAL DOCKET.

When an informal complaint is received respecting any matter within the jurisdiction of the Commission, it is taken up with carriers by correspondence in an effort to secure adjustment or satisfaction of complaint. These complaints are given serial numbers upon what is known as the informal docket of the Commission. During the past year 7,600 such complaints have been received, an increase of 1,050 over the preceding year.

SPECIAL DOCKET.

Upon our Special Docket, which covers applications by carriers for authority to refund to shippers amounts which have been collected in accordance with tariffs conceded to be for one reason or another unlawful, 6,730 applications have been filed during the year, an in-

crease of 721 over the preceding year. Upon this docket orders have been issued during the year in 4,610 cases, an increase of 1,514 over the preceding year. Reparation has been awarded thereunder during the year in the sum of \$349,167.45, an increase of \$54,155.55 as compared with the previous year. During the current year 1,818 cases have been dismissed or otherwise disposed of without the making of orders for reparation, an increase of 1,019 over the previous year.

FOURTH-SECTION DOCKET.

During the year ending November 1, 1913, 1,252 special applications were filed for relief from the provisions of the fourth section, a decrease of 741 as compared with the previous year. For the same period 1,256 fourth-section orders were issued, 199 of which were permanent in character and 1,057 were for temporary relief. One hundred and fourteen applications were withdrawn. This is a decrease of 458, as compared with the previous year, in number of applications disposed of.

A brief reference to this part of our work appears in another portion of the report.

INVESTIGATION AND SUSPENSION DOCKET.

The number of investigation and suspension proceedings instituted during the year is 159, an increase of 39 over the previous year. One hundred and fifty-one cases were disposed of: In 32 instances the tariffs under suspension were voluntarily withdrawn by carriers; in 41 instances the changes were allowed as filed; in 32 instances they were allowed in part; in 42 instances the proposed changes were disallowed; and in 4 instances the protests were withdrawn and proceedings subsequently dismissed.

Reference to this work will be found in another portion of the report.

FORMAL DOCKET.

The number of formal complaints filed during the year is 1,023, an increase of 268 as compared with the previous year. During the same period 724 cases have been decided and 139 have been dismissed by stipulation or otherwise, making a total of 863 cases disposed of during the year, as compared with 778 during the previous year, an increase of 85.

During the year the Commission has conducted 1,401 hearings, as compared with 1,154 hearings during the previous year, in the course of which approximately 140,000 pages of testimony have been taken, an increase of 15,000 pages.

RATE SCHEDULES AND APPLICATION OF RATES.

During the 12 months ended November 30, 1913, 141,257 tariff publications containing changes in rates, fares, or charges were filed with the Commission. This is an increase of about 32,500 over the preceding 12 months. The increase is accounted for by the fact that the carriers in so-called official-classification territory reissued practically all of their tariffs, showing an increase in rates of approximately 5 per cent, which tariffs were, as mentioned elsewhere in this report, suspended by the Commission. The number of such tariffs, including the supplements thereto giving notice of the Commission's suspension, was about 40,000. There has been a steady decrease in the number of effective tariffs since the Commission was authorized to prescribe rules and regulations governing the filing of tariffs, and at the present time the number of current tariffs in its files is less than at any time since the act was amended in 1906. No change of importance or of public interest has been made in the policy or methods in this branch of the work, although the subject is given constant study with a view to a further simplification of rate schedules where this seems possible. The rate work of the Division of Tariffs increases and grows in importance, and through this division the Commission has been of service to various State commissions and numerous shippers and carriers throughout the entire country.

There has been no change in the situation with respect to telephone, telegraph, and cable companies, as outlined in our twenty-fifth annual report, as to the application of section 6 of the act and of the Elkins Act to such companies.

DIVISION OF INQUIRY.

Since December 1, 1912, 61 indictments for criminal violations of the act to regulate commerce and the Elkins Act have been returned, many of which are against two or more defendants jointly. Of these indictments 28 are against carriers or carriers' agents, and 33 are against shippers, passengers, or interested parties other than carriers.

During the year 72 prosecutions have been concluded, in 50 of which the defendants pleaded guilty, or *nolo contendere*. In 1 case a jury rendered a verdict of guilty; in 3 cases juries rendered verdicts of not guilty, in 2 cases the jury disagreed; in 16 of the cases the Government entered a plea of *nolle prosequi*. In practically all of the cases that were dismissed or *nolle prosequi* alternative indictments had been drawn, based on the same facts, so that in case of trial conviction could be had under that section of the act which the evidence might show to have been violated. The penalties assessed

ranged in amount from \$100 to \$20,000, the aggregate fines imposed during the year amounting to \$145,400.

The prosecutions begun and concluded during the year were distributed over the following States: California, Colorado, Georgia, Illinois, Indiana, Iowa, Kentucky, Massachusetts, Maine, Michigan, Missouri, Minnesota, New York, Ohio, Oklahoma, Louisiana, Pennsylvania, Tennessee, Texas, and Virginia.

The number of indictments returned and prosecutions concluded, as well as the aggregate amount of fines recovered, for violation of the act during the past year are less than for the previous year. The value of penal and criminal laws generally is to be measured by the peace, order, and security of society resulting from their observance rather than by the amount of punishment for their infraction. Tested by this standard the year's showing indicates a gratifying tendency among carriers and shippers alike to understand and conform to the law. Not only is it true that the vigorous enforcement of the Elkins and Hepburn Acts have discouraged willful violations of the rights declared by these laws, but it has also called to the attention of well-intending railroad officials and shippers the inherent wrong involved in practices which were but a few years ago prevalent.

The false billing of freight by shippers continues. During the year a large number of instances of this kind have been investigated. In cases where it appeared possible that the offending shipper was honestly mistaken as to the proper classification under which to ship his goods a warning as to the future has been resorted to rather than prosecution. In many cases, however, the misbilling or false weighing has been clearly willful, and in all such cases prosecution has been undertaken. During the year fines for these offenses amounting to \$16,750 in the aggregate have been recovered.

A large number of other instances of false billing as to kind and weight of commodities shipped by firms in New York City have been investigated, and further indictments for this offense are expected in the southern district of New York within a short time. The temptation to the dishonest shipper to commit the offense forbidden by section 10 is in many cases so strong and the injustice resulting to competitors who scrupulously observe the law is so great that it is believed these offenses can only be effectually checked by the tendency of the courts, already observable, to increase the punishment for them.

The amendments of 1910 to section 10 of the act make it an offense for a shipper or consignee to secure transportation at less than the published rates by means of false claims for damage. Investigation disclosed that several consignees of eggs located in New York City were, as a practice, making claims against the carriers for damage to shipments of eggs much greater in amount than the actual damage

suffered. These false claims were made possible by the failure of certain agents of the carriers to properly inspect shipments before delivery. It developed that the shippers in question were bribing these agents of the carriers to discriminate in their favor by thus failing properly to inspect shipments and, further, by favoring these particular shippers of eggs with expedited service. Upon the above facts, William A. Scarborough, Charles T. Adams, De Winter & Co., John C. De Winter, E. M. Garrison, H. D. Wheeler, George Miller, R. B. Shimer & Co., H. C. Shimer, Adolph Fortgang, Willard P. Brown, and W. H. Sanford were indicted for obtaining transportation at less than the lawful rate by means of false claims for damage and for inducing and also for attempting to induce agents of carriers to discriminate unjustly in their favor. All of these defendants except the last one above named have pleaded guilty. In the case of H. D. Wheeler and George Miller sentence has been suspended. Fines aggregating \$30,000 have been assessed against the other defendants. F. E. Harris was also indicted in the southern district of California for making false claims, and upon pleading guilty was fined \$500. These cases involved an offense by shippers for which the act provided no penalties prior to 1910. The offense of securing allowances by false claims for damage so clearly arises from a fraudulent intent and results in such substantial losses to the carriers, as well as in discrimination against other shippers, that it will be vigorously prosecuted whenever detected.

Abuses of the transit privileges accorded by carriers were formerly explained by the failure of shippers to understand the strict requirements of the law. So much publicity, however, has been given to the proper limits within which these privileges may be used that ignorance can scarcely be urged in the future as an excuse for failing to conform strictly to the tariff rules and regulations governing these privileges. In January the Michigan Central Railroad Co. pleaded guilty of granting and Chapin & Co. of receiving concession by the device of substitution in transit. Each defendant was fined \$5,000. In November the Roberts & Hamner Grain Co., of Memphis, Tenn., was indicted for substitution in transit by means of false billing of grain. Similar indictments have just been returned against the Lumber Products Co. and G. H. Evans Lumber Co. for substitution of lumber in transit at Chattanooga by means of false billing. Further prosecutions under the Elkins Act and under section 10 of the act to regulate commerce for abuses of transit privileges will be undertaken until the tariff provisions are properly enforced and these shipping privileges are administered and enjoyed under such conditions as not to involve unjust discrimination in favor of dishonest and against law respecting shippers and carriers.

Still another case in which abuse of transit privileges has been attempted and held to be unlawful is the so-called Imperial Rice case. Investigation showed that Leo B. Hahn, A. M. Waugh, and T. F. Ryan, trading under the name of the Imperial Rice Co., would make a carload shipment of rice from a point in Texas to Houston under a rate on file with the State commission of Texas, there unload the car, and later reload it with entirely different rice and ship this load to a point in another State at the balance of the through rate that would have applied on the original shipment had it been shipped through. This was done under a tariff permitting stoppage at Houston to complete loading. This case would be similar to the familiar substitution in transit cases where a local rate from a transit point has been defeated by improperly applying the balance of a through rate from such point, were it not for the fact that in this instance the rate from Houston, the transit or reshipping point, was the same as the through rate from the point of origin of the original shipment. Under these circumstances it could not be alleged that the interstate rate from Houston was defeated by charging from Houston only the balance of the through rate applying from points of origin since an amount equal to the local rate from Houston was in fact charged on the interstate shipment, and the transportation from point of origin to Houston was secured free of charge. The indictment therefore alleged a concession of the State rate from point of origin to Houston in connection with the interstate shipment from Houston. Two of the defendants, Leo B. Hahn and T. F. Ryan, pleaded guilty, and a fine of \$1,000 was assessed against each.

Failure on the part of several carriers to collect from certain shippers the demurrage charges lawfully filed by them has been the subject of an extended investigation. This is a kind of discrimination which is difficult of detection because it is not disclosed by the shipping papers on which the regular transportation charges are recorded. It developed, however, that such charges were not being made by the New York Central & Hudson River Railroad Co. and the Erie Railroad Co. at Buffalo and by the Michigan Central Railroad Co. at Detroit. Indictments were brought against these carriers for granting concessions and failure to observe their lawfully published charges. The New York Central & Hudson River pleaded guilty to three distinct indictments and paid fines aggregating \$30,000. The Erie Railroad Co. pleaded *nolo contendere* and paid a fine of \$20,000. The case against the Michigan Central Railroad Co. is still pending. Other instances of this practice are now the subject of investigation.

In *Delaware, Lackawanna & Western Railroad Co. v. United States* (not yet reported) the Supreme Court has just handed down a decision further defining the operation of the commodities clause.

This is the first construction of the clause by the Supreme Court arising out of a criminal prosecution. Over a year ago indictments were returned against the Delaware, Lackawanna & Western Railroad Co. and the Delaware & Hudson Co. for violating the commodities clause. It appeared that both of these common carriers were transporting hay owned by them from points in New York State for use at mines owned by them in Pennsylvania. It was contended by the defendants that the commodities clause was designed only to prevent transportation by a common carrier of commodities in which it had an interest when such commodities were to be marketed in competition with other shippers and that the clause was not intended to prevent transportation by a common carrier of a commodity in which it had an interest when such commodity was to be consumed in the operation of mines which it owned. It was also contended that since the commodity in question was sold to the carrier subject to its inspection and acceptance or refusal at destination, it did not, therefore, acquire an interest in the commodity until the transportation had been completed. In the case against the Delaware, Lackawanna & Western Railroad Co., a trial by jury was had, verdict of guilty rendered, and a penalty of \$2,000 imposed by the district court. Appeal was taken and the Supreme Court sustained the decision of the district court. The case against the Delaware & Hudson Co. is still pending.

The year's work has been made significant because of the variety of cases in which the courts have shown a disposition to so construe the Elkins Act as to make rebating and the granting of concessions punishable, however ingenious may have been the device employed, to defeat the published rates. The more important of these cases are summarized below.

Investigation disclosed the fact that in the State of Colorado it was an established practice for certain carriers to issue free passes good only within the State for the purpose of influencing the routing of interstate shipments of freight. No violations of the antipass provisions of the act to regulate commerce were involved, since the passes applied only between points within Colorado. Such passes, however, were things of value to shippers, and when granted in connection with interstate shipments they amounted to concessions or rebates from the lawful rates. On this theory indictments were returned against the Denver & Rio Grande Railroad Co. and the Colorado & Southern Railway Co. for granting and against the Colorado Fuel & Iron Co., the Colorado Portland Cement Co., the Great Western Sugar Co., the United States Portland Cement Co., and the Victor-American Fuel Co. for receiving rebates and concessions. Upon plea by each of these defendants fines aggregating \$7,000 were assessed. As a direct result the legislature of Colorado has enacted laws

restricting the issuance of free passes between points in that State within proper limits. This case and the Imperial Rice case described above establish the proposition that concessions as to State transportation, either freight or passenger, are unlawful if allowed in connection with interstate shipments.

Another indirect method of granting rebates and concessions which has been held to be within the prohibition of the Elkins Act is the practice which recent investigation shows to be not uncommon, by which certain carriers make leases of land, warehouses, etc., to interstate shippers at less than a fair rental value, or sublet such properties to shippers at less than the rental paid by the carriers themselves. In *United States v. Union Stock Yard & Transit Co.* (226 U. S., 286) the Supreme Court held that it amounted to a rebate in violation of the Elkins Act for an interstate carrier to pay part of the cost of a warehouse of a large interstate shipper who agreed to handle only goods transported by it. In *Cleveland, Cincinnati, Chicago & St. Louis Railway Co. v. Hirsch* (204 Fed., 849) the Circuit Court of Appeals of the Sixth Circuit held that a lease by a carrier to an interstate shipper at less than a fair rental was void because it amounted to a concession or rebate in violation of the Elkins Act. The Ore Dock cases, which were investigated by this division and concluded a year ago and in which total fines amounting to \$123,000 were imposed, definitely settled the fact that carriers may not lease their terminal facilities to one set of shippers in a way that would discriminate against other shippers. The cases above cited go a step further by applying this doctrine not merely to the terminal facilities of a carrier but to any property owned by it, including real estate which constitutes no part of its transportation facilities. Upon this theory an indictment has been secured against the Lehigh Valley Railroad Co. for granting a concession by leasing certain lands at Buffalo for a coal yard to the Yates-Lehigh Coal Co. at less than a fair rental. Similarly, an indictment has just been returned against the Wichita Falls & Northwestern Railroad Co. for granting a concession by subletting certain land to an interstate shipper at a lower rental than the carrier was itself paying to the original lessor.

Another indirect device for granting a rebate for which indictment has been secured during the year is that resorted to by the Vandalia Railroad Co. in favor of the Lumaghi Coal Co. The Vandalia Mineral Co. is a corporation formed by interests controlling the Vandalia Railroad Co. for the purpose of holding coal-mining lands which the Vandalia Railroad Co. under its charter was not permitted to own. The Vandalia Improvement Co. is a holding company also controlled by the interests controlling the Vandalia Railroad Co. When the Vandalia Mineral Co. was organized the Vandalia Improvement Co. bought all of its stock with money furnished by the Vandalia

Railroad Co. Investigation showed that the Vandalia Mineral Co. loaned \$260,000 to the Lumaghi Coal Co. to buy coal-mining properties located on the line of the Vandalia Railroad Co. This loan was made at 2 per cent interest on condition that the Lumaghi Coal Co. would ship all of its coal over the Vandalia Railroad. It further developed that the Vandalia Mineral Co. had borrowed this money from a bank at 4 per cent interest on notes which had been indorsed by the Vandalia Railroad Co. It was at once evident that the whole transaction was a device by which the railroad company was to grant a rebate amounting to 2 per cent interest on the amount of the loan in consideration of the routing of interstate shipments. Accordingly an indictment was secured against the Vandalia Railroad Co. for granting rebates.

Still another case in which carriers connived with a shipper for the purpose of defeating the published rates by roundabout methods was presented to a Federal grand jury in the eastern district of Illinois. The O'Gara Coal Co., a New York corporation, with its principal office in Chicago, had a contract for supplying fuel coal to the Grand Trunk Railway Co. of Canada. This coal was shipped from the mines in southern Illinois via the Cleveland, Cincinnati, Chicago & St. Louis and Chicago, Indiana & Southern to South Bend, Ind., where it was turned over to the Grand Trunk Western Railway Co. All of the shipments were billed by the O'Gara Coal Co. to Battle Creek, Mich., a point on the Grand Trunk Western. As a fact, however, the contract of the O'Gara Coal Co. with the Grand Trunk Railway Co. provided for delivery of the coal at South Bend, Ind., the junction point between the Chicago, Indiana & Southern Railway and the Grand Trunk Western. By the arrangement with the Big Four the O'Gara Coal Co. prepaid to this carrier the freight charges to South Bend on the basis of unpublished divisions of the through rates to Battle Creek. These divisions were less than the local rates to South Bend which should have been applied. In this manner the O'Gara Coal Co. secured concessions on all of the coal shipped. The tariffs of the Cleveland, Cincinnati, Chicago & St. Louis expressly prohibited partial prepayment of freight charges when through rates were in effect. In order to make possible the practice of the O'Gara Coal Co. the Cleveland, Cincinnati, Chicago & St. Louis and the Chicago, Indiana & Southern Railway Co. ignored this tariff provision. Responsibility was also brought home to the Grand Trunk Railway Co. by the fact that the waybilling and transfer slips advised this carrier that the destination billed was different from the destination of actual delivery. Upon the above facts indictments were returned against the O'Gara Coal Co. for receiving concessions, against the Cleveland, Cincinnati, Chicago & St. Louis and the Chicago, Indiana & Southern for granting concessions. against the Cleve-

land, Cincinnati, Chicago & St. Louis for granting discrimination, and against the Cleveland, Cincinnati, Chicago & St. Louis, the Chicago, Indiana & Southern, and the Grand Trunk Railway Co. of Canada for conspiracy to grant concessions to the O'Gara Coal Co. These cases are now awaiting trial.

The relations between certain of the New York Central lines and the O'Gara Coal Co. were also the subject of a prosecution undertaken in the northern district of Illinois. Investigation showed that the Lake Shore & Michigan Southern Railway Co. had issued in 1909 seven vouchers for an aggregate of \$60,000 in favor of the O'Gara Coal Co. and had concealed the payment on its books by charging it to a large expense account. The vouchers were not supported by any papers whatever. The attention of John Carstensen, vice president in charge of accounting of several of the New York Central lines, was called to the matter less than a year after the payments were made. Several conflicting explanations as to the occasion for these vouchers were offered by certain officers of the carrier. Investigation disclosed that Mr. Carstensen had been one of the organizers of the O'Gara Coal Co. All of the circumstances led to the conclusion that the carrier had knowingly granted a rebate to the O'Gara Coal Co.. Accordingly indictments were secured against the Cleveland, Cincinnati, Chicago & St. Louis Railway Co., the Chicago, Indiana & Southern Railway Co., the Lake Shore & Michigan Southern Railway Co., and John Carstensen, vice president of the New York Central lines, for granting rebates and discrimination. In September, 1913, the Lake Shore & Michigan Southern Railway Co. deducted from a payment for fuel coal due the O'Gara Coal Co. the amount of the alleged rebate. The case is awaiting trial.

Two important prosecutions have been undertaken against carriers for having their company coal billed to fictitious destinations on their line in order to defeat the published rates to actual destinations. Investigation showed that in the case of several hundred cars the Seaboard Air Line Railway Co. had carloads of coal shipped from Briceville, Tenn., and near-by points on the Southern Railway billed to the Seaboard Air Line at Williams, Ga. These shipments were delivered by the Southern Railway to the Seaboard Air Line at its junction at Helena, Ga. Many of the shipments were consumed at that junction point and others were diverted to other points, but none of them went to Williams, Ga., as the billing directed. The result was that, instead of paying the local rate of the Southern Railway Co. from Briceville to Helena or the joint rate from Briceville to actual destination and receiving out of this joint rate its appropriate division, the Seaboard Air Line paid the joint rate applying to the more distant point, out of which the Southern Railway received a division much smaller than its local rate to the junction or

its division of the joint rate to actual destinations. The Seaboard Air Line was indicted in the southern district of Georgia in 13 counts for receiving a concession by the above device. An early trial in this case is anticipated. Similarly the Grand Trunk Western Railway Co. was found to be practicing this device as to shipments of its company coal. This carrier had its coal shipped from Newark, Ohio, and near-by points on the Baltimore & Ohio Railroad billed to Battle Creek, Mich., at a joint rate of \$1.60, out of which the Baltimore & Ohio received a division of \$1. The coal was actually delivered, however, at South Bend, Ind., to which the lawful joint rate was \$1.55, and out of which the division of the Baltimore & Ohio was \$1.15. Thus the Grand Trunk Western defeated the Baltimore & Ohio proportion of the joint rate to South Bend to the extent of 15 cents per ton. The Grand Trunk Western Railway Co. has been indicted in the southern district of Ohio and the case is now pending.

These cases are in no sense novel, for the Commission in *Beekman Lumber Co. v. St. Louis & San Francisco Railroad Co.* (21 I. C. C., 270) announced that such practices by a carrier in an effort to defeat the divisions properly accruing to its connecting lines were unlawful, and following this opinion an indictment was returned against the New Orleans & Northeastern Railroad Co. for this offense, and this carrier pleaded guilty and paid a fine. The cases are chiefly significant because of the extent to which the carriers involved were violating the law and cheating their connections by this device.

One of the cases pending, which is of particular interest, is that involving the application of the criminal provision of the act to express companies. In February, 1912, indictments were returned in the western division, southern district of Ohio, against the Adams Express Co. and in the western district of New York against the Adams Express Co. and American Express Co. for charging other than their lawful rates in violation of section 6 of the act. The defendants at once filed motions in both jurisdictions to quash the indictments on the ground that since these express companies were joint stock associations and not corporations they were therefore not subject to the provisions of section 6 as controlled by section 10 of the act. The lower courts treated these motions as demurrers to the indictments. In the western district of New York Judge Hazel dismissed the motion, holding that the defendants were subject to the act. In the southern district of Ohio Judge Hollister, without handing down an opinion, sustained the demurrer and quashed the indictment. On writ of error to the Supreme Court it was decided in *U. S. v. Adams Express Co.* (229 U. S., 381), that while as a matter of local law courts have refused to treat joint stock companies as legal entities, yet since the act expressly provides that the term

"common carrier" shall include express companies, it follows that the penalties imposed on common carriers by section 10 apply to joint stock companies like the Adams Express Co. as well as to corporations. In *American Express Co. v. U. S.* (212 U. S., 522), the Supreme Court had previously held that express companies, even though they were only joint stock associations, must under the act file schedules of their rates. These two decisions make it clear that the great express companies, which are all organized as joint stock associations, are subject not only to the duties but also to the penalties imposed upon common carriers generally.

During the past two or three years a great many complaints have been received from grain dealers located in Philadelphia and elsewhere against the manner in which the Keystone Elevator at Philadelphia was being operated. This elevator is owned by the Pennsylvania Railroad Co. and leased to the Keystone Elevator & Warehouse Co. The Commission upon its own motion instituted an investigation into the manner in which this terminal facility was being operated. The investigation disclosed that the firm of L. F. Miller & Sons, of Philadelphia, was the consignee of over 90 per cent of all the grain passing through this elevator, and, furthermore, that Harvey C. Miller, one of the partners in this firm, owned 93 per cent of the stock in the elevator company. After the case had been submitted to the Commission and before the Commission's opinion was issued Harvey C. Miller withdrew from the firm of L. F. Miller & Sons to devote his attention exclusively to the management of the Keystone Elevator & Warehouse Co. The Commission on January 7, 1913, issued its opinion condemning certain of the practices found to exist in the conduct of this elevator. The disregard of the law was so flagrant, however, that the facts presented a case for criminal prosecution rather than merely equitable relief. Accordingly a further investigation was made by agents of the Commission, with the result that indictments have just been returned against the Pennsylvania Railroad Co. for failure strictly to observe its demurrage tariffs; against the Pennsylvania Railroad Co., H. C. Miller, and J. F. McLaughlin, superintendent of the elevator company, for charging less than the lawful rates for elevation and storage services; against the Pennsylvania Railroad Co., H. C. Miller, and J. F. McLaughlin, for granting rebates to L. F. Miller & Sons by allowing false claims based on false weights (40 counts); against L. F. Miller & Sons, including H. C. Miller, J. E. Miller, M. F. Miller, and their bookkeeper, Thos. M. Sloane, for accepting rebates by means of claims founded on false reports of weights (40 counts); against the Keystone Elevator & Warehouse Co. and J. F. McLaughlin, its superintendent, for making false report of weights on grain consigned to L. F. Miller & Sons; and against H. C. Miller, J. E. Miller, M. F. Miller, Thos. M.

Sloane, and J. F. McLaughlin (1) for conspiracy to violate the Elkins Act, (2) for conspiracy to secure reduced rates by false claims in violation of section 10.

This case is one of great importance to the grain trade throughout the East because L. F. Miller & Sons have been heavy purchasers in the grain centers. All routes leading to or competing with the route of the Pennsylvania Railroad Co. to Philadelphia, as well as routes via other gateways to the southeastern territory and New England points, have felt the effect of the enormous concessions and rebates paid by the Pennsylvania Railroad Co. to the Millers Bros. during recent years. Furthermore this grain firm has been in a position to underbuy and undersell its competitors in the grain markets from the Atlantic coast as far west as Chicago. While the responsibility for this condition is disclaimed by the officials of the carrier, the fact that L. F. Miller & Sons routed practically all of their business via the Pennsylvania Railroad, and, in fact, secured preference as to elevation, demurrage, and storage charges from this carrier, can not be disputed.

In addition to its usual duties of investigating and assisting in the prosecution of criminal cases arising under the act, the division has during the past year taken an active part in two important general investigations undertaken by the Commission—the *Anthracite Coal Investigation* and the *Investigation into the Relation Between Rail Carriers and Water Lines*. In both of these matters extended interrogatories were addressed to the carriers concerned and a voluminous collection of data has been assembled. In addition to this method of securing the information needed, considerable field work has been done by special agents of the division. While this work has disclosed certain violations of the act, its value consists primarily in enabling the Commission to pass upon the reasonableness of the rates and propriety of the practice of carriers interested in coal lands and in water lines.

Another particular in which the year's experience demonstrates that the terms of the act need to be made more certain, relates to the language of section 20 requiring carriers to give representatives of the Commission access to their "accounts, records, and memoranda." While carriers generally have shown a commendable frankness in exhibiting all of their files to the agents of the Commission, there have recently been instances where a carrier has refused access to certain of its correspondence files on the ground that they were not properly to be considered as "accounts, records, or memoranda." The work of detecting and prosecuting many of the ingenious devices for rebating and otherwise violating the law has been greatly facilitated in the past by the fact that representatives of the Commission were authorized to examine the correspondence relating to

questionable transactions which was to be found in the files of the carriers. It is believed that such correspondence files are clearly comprehended within the class of memoranda to which Congress intended to give the Commission the right of access. Owing to the doubt entertained by certain of the carriers on this point, however, it will be necessary in this connection to present test cases to the courts at an early date. Such litigation may extend over a long period, and meanwhile it is of the utmost importance that the Commission should continue its investigations as it has done in the past. For this reason additional legislation making explicit and certain the authority of the Commission to examine all correspondence files, indexes, and other papers and documents retained by carriers subject to the act is desirable if the many violations of the act which can be disclosed only by access to these papers are to be effectually discouraged.

* * * * *

THE FOURTH SECTION.

The most important action taken by the Commission in disposing of questions arising under the amended fourth section of the act was that in connection with the adjustment of rates from eastern territory to Pacific coast destinations and points intermediate, known as the Intermountain cases. Respecting these cases it was stated in our last annual report:

The various phases of this section of the act, as last amended, and the interpretation and application, as well as the constitutionality thereof, were referred to in our last annual report to the Congress and were discussed at length before the Supreme Court last spring in the argument of the so-called Intermountain cases, which had been appealed from the Commerce Court, the latter having decided adversely to the validity of the orders of the Commission therein. After submission these cases were again assigned for argument and were recently reargued before the full court, the vacancy on the Supreme Bench having been filled since the first argument. It is expected that when they are decided the Commission will be aided by the decision in disposing of many other cases arising under this section.

These cases are still under submission in the Supreme Court, the questions involved are fundamental, and until they are decided the larger and more important situations can not be disposed of, and many minor questions are necessarily delayed.

Owing to the long-established basing-point method of making rates in the territory east of the Mississippi and south of the Ohio and Potomac Rivers, there is perhaps no more complicated and difficult situation in dealing with the questions arising under this section than is there presented. The petitions of the carriers operating in this territory recite with considerable detail the variety and character of competition and the difficulties attendant upon any

scheme of rate adjustment in which distance is the controlling measure of the amount of the rate.

Exhaustive hearings have been had with reference to this situation. Briefs have been filed, oral argument has been heard, and the matters involved are now before the Commission for determination.

This section is bounded by the Atlantic Ocean, the Gulf of Mexico, and the Mississippi and Ohio Rivers. It is pierced by numerous navigable streams. Before the advent of the railroads trading and commercial centers had been established at the ports and upon the rivers. The railroads sought the places where commerce was concentrated and necessarily entered into competition with the water carriers. This promptly led to their making rates to and from the water competitive points lower than from and to intermediate points at which there was no such competition.

As railroads increased in numbers and mileage the same policy was pursued as between points at which there was active competition of railroads and points which did not have such competition. Later the same policy was extended to market competition between the producing points in the West and the railroads serving them and the producing points in the East and the carriers therefrom. Thriving business communities and large commercial centers have grown up in which large numbers of men have invested, in the aggregate, great sums.

That such points have a decided advantage through these rate adjustments over points not so favored is beyond dispute. A town or city is entitled to the advantages accorded it by nature, but not to undue preference conferred by carriers. If, in competition with a water carrier, a railroad makes low rates to a point that is served by such water carrier, that point has the advantages and benefits of the competition. If, however, the railroad must make such rates the maxima at all intermediate points where the water competition is absent, it is possible that in order to maintain gross earnings sufficient for its existence it would be obliged to retire from competition at the water-competitive point. That point would thus lose the benefits of rail competition and might suffer from increased rates by the water carrier. Assuming that each intermediate point has rates that are reasonable per se, it is somewhat difficult to see how it would be benefited by destruction of the competition at the more distant point. The same principle applies in a general way to the other forms of competition.

A rigid and inflexible application of the long-and-short-haul rule would result in many reductions in rates to intermediate points, many increases in rates to the more distant points, and withdrawal of competition at many points, all dependent upon the volume of traffic involved as between the more distant points and the intermediate

points and the competitive relationships between the commodities which made up that traffic. The interests of producers, consumers, and communities are involved to an extent as great as, and probably greater than, that of the carriers.

The statute authorizes continuance of the deviations from the rule which existed when the amended section was adopted until the applications for permission to maintain them are passed upon by the Commission. As will appear later, the number of such applications was large. The questions presented are, as we have endeavored to indicate, delicate and complicated. The relationship between the rate paid by a shipper and that paid by his competitor is of vital interest to both. The extent to which a carrier ought to be permitted to depart from the rule can be properly determined only after painstaking and thorough investigation and study.

As stated in our last annual report, approximately 5,000 applications for authority to continue existing deviations from the general requirements of the fourth section of the act, as amended, were filed within the period therein prescribed, to wit, on or before February 17, 1911.

In some instances these applications have reference only to particular situations, involving peculiar circumstances, while in others they include all rates published in particular tariffs which in any manner contravene the provisions of this section. In still other instances single applications were filed on behalf of the carriers asking relief as to all rates in contravention of this section contained in all tariffs in which they participate.

Of the 5,000 applications above mentioned, approximately 1,100 have been disposed of by orders of the Commission, and certain parts of many others have been disposed of in connection with formal cases decided by the Commission.

Special applications, numbering 3,722, have been filed requesting authority to change rates which do not conform to the fourth section requirements in order to meet new and particular situations brought about by the continually changing commercial and transportation conditions. These applications have been responded to by special orders, most of which are necessarily temporary in character and automatically expire when the Commission acts upon the general applications which protect the rates to which the changes are related.

During the year ended November 1, 1913, 1,252 of these special applications were filed. During the same period 114 applications were withdrawn, due mainly to the fact that the rates sought to be established were authorized under some general order of the Commission.

During the year 1,256 fourth-section orders have been issued, 199 of which were permanent in character and 1,057 of which were for temporary relief.

Of the 199 permanent situations passed upon, some measure of relief has been granted in 137 cases and has been denied in 62 cases.

Of the 1,057 temporary applications disposed of by orders relief has been granted, in whole or in part, in 878 and denied in 179 cases.

The applications for temporary relief have been based upon a variety of reasons. They are filed principally by carriers whose present rates do not conform to the provisions of the fourth section, but are protected by applications filed on or before February 17, 1911, that have not as yet been decided by the Commission.

Some of the situations shown where temporary relief was sought are as follows:

1. Where a new line has been constructed between common or junction points, or between points that are already served by other carriers, and which, by the construction of this new line, become junction points. It is necessary in such cases for this new line to establish the same rates as are in effect via the older lines; and where the rates of such older lines at the present time do not conform to the fourth section, but are protected by applications, the petition of the new line has been granted.

2. In some cases there are a number of lines or routes between certain points, and one of these lines has not established the same scale of rates, or the same rates, on certain commodities as apply on the other lines. When the rates of such other lines do not conform to the fourth section, permission has been granted to the petitioning line to establish the same rates without observing the long-and-short-haul provision of the fourth section.

3. In other cases rates are in effect to or from a point on a given commodity, but higher rates are in effect to or from a point in close proximity thereto, situated on another line. Where it appears that the same transportation conditions which are present at the former point are also present and affect the traffic from the latter point, permission has been granted to establish the same rates to and from the one point as are in effect at the other.

4. In many cases where commodity rates that do not conform to the provisions of the fourth section are in effect on certain articles but those rates do not apply to analogous articles as to which the same transportation conditions attach, and which usually take the same or relative rates, permission has been granted to establish the same or relative rates on such articles.

5. There are also many cases where the commodity descriptions that applied on certain articles at the time that the rates were established have become, by reason of changes in the method of packing, shipping, or manufacture of such articles, no longer applicable. Where these conditions have been brought to our attention permission has been granted to revise the commodity descriptions. There are

other cases where commodity rates have been established which at the time of their establishment were lower than the class rates applicable to such articles, but have become, by reason of changes in the classification or reduction in class rates, higher than such class rates. Permission has been granted in such cases to cancel such commodity rates and apply, in lieu thereof, class rates.

6. It has been the practice for many years to apply the same import and export rates from and to the different Gulf ports. Cases have arisen where, through changes, the rates from or to certain points have become higher or lower than are applicable at other ports, and where these have been brought to our attention permission has been granted to readjust such rates in order that these ports may be kept on a parity.

7. In addition to the applications that are based on these reasons, many others have been filed which ask for authority to establish or to revise rates from points of production of various commodities in order to enable the producers thereof to compete with producers at other points from which lower rates, not in conformity with the fourth section, are in effect to various points of consumption. This is the competition of one market of supply against another, given force and effect by the action of the lines serving these markets, and is a reason which has not been recognized by the Commission as being, in and of itself, sufficient ground for departing from the requirements of the fourth section. That question, together with others involving the extent of the Commission's power under the fourth section, is now before the Supreme Court for determination. In view of this fact the Commission has felt that, pending a decision by that tribunal, relief in such cases should be granted for a limited period. Such applications have, therefore, been granted for a period of six months.

There are, perhaps, other cases where a few of the applications have been based upon other grounds. These, however, are the principal situations in which the Commission has, upon application, granted temporary relief from the provisions of the fourth section.

The applications for permanent relief that have been acted upon favorably by the Commission have been granted for various reasons, and the following are some of the considerations that have influenced the Commission in its decisions.

The principal reason for granting the majority of such applications has been the fact that the line seeking relief is a circuitous line which desired authority to meet the rates that were in effect between common or competitive points via a more direct line. In such cases, where it has been shown that the petitioning line is markedly circuitous, generally 15 per cent or more longer than the short line; where the short line has observed the fourth section at intermediate

points, and where the intermediate rates upon the circuitous line have apparently borne a reasonable relation to the rates at the more distant points, and such rates have not been the subject of complaint, the relief prayed has been granted.

Other applications have been based upon the ground of water competition; that is to say, rail lines have sought to meet rates between water-competitive points in force by water lines operating between such points. These applications have been granted where it has been shown that an active, forceful water competition existed, and where the rates at the intermediate points have not appeared to be relatively unreasonable, and where not the object of attack in pending complaints before the Commission.

There have been a few other applications covering unusual and peculiar situations where other considerations have influenced the decisions of the Commission.

SUSPENSION OF PROPOSED CHANGES IN TARIFF SCHEDULES.

In our last report in referring to the provision of section 15 of the act of June 18, 1910, giving the Commission power to suspend the operation of tariff schedules pending investigation of the rates therein contained, we pointed out the method of procedure and practice intended to insure a proper discretion in the exercise of this authority. The Commission's procedure and practice in this respect have not been changed.

The number of proceedings instituted under this docket during the year is 159, an increase of 39 as compared with the previous year. Of these, 62 cases have been disposed of. In 18 instances the tariffs under suspension were voluntarily withdrawn by carriers. In 18 instances the changes were allowed as filed; in 8 instances they were allowed in part; in 15 instances the changes were disallowed; and in 3 instances protests were withdrawn and proceedings subsequently dismissed.

In all 151 of these cases were disposed of during the year. Of 91 cases mentioned in our last annual report as not decided, 89 have been disposed of. In 14 instances the tariffs under suspension were voluntarily withdrawn by carriers. In 23 instances the changes were allowed as filed; in 24 instances they were allowed in part; and in 27 the changes were disallowed, and in 1 instance the proceeding was dismissed, no decision being rendered. Since November 30, 1912, the Commission has suspended tariffs in 159 cases and has declined to exercise that authority with respect to proposed changes in 191 cases.

Sometimes the protest and request for suspension relates to reduced rates or to a tariff which contains both increased and reduced rates, the changes proposed being an effort to correct a misalignment of rates. The Commission has declined to suspend proposed reduced

rates except in an instance where resulting undue discrimination would apparently follow the establishment of those rates.

In the appendix containing statement of points decided by the Commission in reported cases during the year are included cases arising upon the suspension of tariff schedules. It is therefore not deemed necessary to have a separate appendix covering cases of the latter class. While this was done in our last annual report, for the reason above stated, it will be discontinued.

WESTERN CLASSIFICATION.

Since the transmission of our last annual report we have disposed of the proceeding which was then under consideration involving an inquiry into the proposed Western Classification, designated as No. 51, the operation of which had been suspended upon numerous protests.

The number of changes in this classification against which protest was made was from 1,500 to 2,000. The individual items were so numerous and varied that no reference can here be made to them. Attention can only be directed to a few fundamental and general questions affecting classification of freight, which were considered and explained in our report in that proceeding.

It was recommended that a compilation of classification units be made expressing the relation to one another of weight, space, and value, as far as practicable, for every item in the classification.

The view was expressed that in revisions of this sort classification as such should be treated entirely separate from the question of the amount of rates or revenues of carriers; the sufficiency or insufficiency of certain revenues and the level of particular rates or schedules being regarded separate questions.

Two of the most important questions involved were those of minimum weights and mixture of articles in car loading. With regard to the former it was stated that carriers should take into consideration both the physical minimum car capacity and the reasonable commercial minimum in deciding upon a classification minimum to govern carload shipments. Respecting carload mixtures it was stated that liberal provision should be made and that artificial restrictions upon mixtures are a restraint upon the freedom of trade and commerce with a tendency to militate against the small dealer. It was stated that mixtures result in a better utilization of car space, lessen the demands upon terminal properties, decrease the expense of operation, and facilitate the movement of traffic.

The Commission's opinion held that, generally speaking, in the territory involved, carload ratings should be established whenever carload quantities are offered for shipment and the public interest requires it.

The testimony in this proceeding revealed considerable diversity in the spread between carload and less-than-carload ratings, and it was held that an excessive difference between carload and less-than-carload rates on the same commodities results in an undue preference to the carload shipper; that the relations between carload and less-than-carload ratings should be established in accordance with some consistent principle throughout the classification and the rate schedules which may be constructed upon it, and that in establishing a proper relation consideration should be given to the relative cost of handling, the demands upon terminal properties and the utilization of equipment.

It was held that from a classification standpoint, the security of a package may with propriety be considered in fixing the rating. A package which is less desirable from a transportation standpoint may be given a higher rating than one which is more desirable. The approval of this rule, however, does not sanction disproportionate and arbitrary increases in the rating of an article when offered in a less desirable package. It was stated that there should be the same relation between the increased rating as between the increase in the risk, difficulty of handling, and other proper considerations.

Other matters referred to in the report were as follows: Classification movement since 1887; necessity for greater uniformity in classification; elements of classification; a graduated scale of minimum weights; rules protecting the minimum on the size of car ordered; declared and invoice values; "follow-lot shipments"; misbiling, due to error of initial carrier; misdescriptions; refusal of carrier to accept perishable freight; compensation for additional service in storing and handling carload shipments; extra charge for bulky articles; unloading of large, heavy, bulky less-than-carload shipments at small country stations where carriers have not sufficient help or facilities for handling; "shipper's load and count"; dunnage allowance; transportation of caretaker of perishable freight; advancement of storage and transfer charges; use as evidence of value and its relation to classification; restriction of the mixture of machinery and machines to articles "necessary for initial equipment"; estimated weights in accordance with standard weights per unit, etc.

Besides the consideration of the general question above referred to, the large number of changes which were proposed in individual items and classification rules were given careful consideration. In many instances the changes proposed by carriers were modified or disallowed. The new classification as modified by the Commission became effective February 14, 1913.

Finally, the Commission expressed the view that classification was essentially a public function, and that meetings of the classification committees should, in the future, be open to the public. During the

pendency of this proceeding the respective committees invited representation on behalf of the Government, in response to which the Commission has designated a permanent delegate through whom it can keep fully advised regarding the progress of classification work.

TRANSCONTINENTAL COMMODITY RATES WESTBOUND.

Another prominent proceeding of inquiry based upon an order suspending the operation of tariffs pending investigation was that instituting an investigation into the propriety of a proposed realignment by the transcontinental carriers of their entire fabric of commodity rates to Pacific coast terminals, including San Francisco, Los Angeles, Portland, and Seattle, on traffic originating in the territory extending east from Colorado common points to the Atlantic seaboard. The action of the carriers with respect to these rates followed that of the Commission in the Reno and Spokane cases, which involved the reasonableness of rates to those points from the East, mainly under the fourth section of the act, and was largely influenced also by the amendment to that section of the act in 1910. By these tariffs the carriers proposed to increase to the basis of the rates to Reno, Spokane, and other interior points, or to an amount in excess of that basis, all of their transcontinental commodity rates which were not actually influenced by the rail-and-water routes via Panama from the East, or which were not potentially influenced by the fact that the particular article of freight could, as a practical matter, move via that competitive route. Changes were proposed with respect to approximately 400 items in the tariffs which were suspended, certain of the changes, however, being reductions. During the course of the hearings it was suggested that much could perhaps be accomplished in the expeditious handling of the matters in controversy and that it would tend as well to bring shipper and carrier closer together in their dealings with each other if they should meet in informal discussion as to the necessities of each article of traffic the rate on which it was proposed to change, these conferences to be held first between the carriers and shippers themselves and later with the Commission. The shippers accordingly met the representatives of the carriers in several such conferences, with the result that their principal differences were settled in a manner mutually satisfactory to them on all but a very few of the items in controversy, subject to approval by the Commission. The question as to the reasonable maximum rate on these latter commodities was left to the Commission for final decision, the carriers agreeing to publish whatever rates the Commission should deem proper, without the necessity for entering a formal order. Upon notice by the Commission of its conclusions with respect to these rates and of its approval of the agreement reached by the parties themselves on the other commodities the carriers promptly published the revised schedules.

PROPOSED RATE INCREASES IN OFFICIAL CLASSIFICATION TERRITORY.

The carriers operating in what is known as Official Classification territory have recently filed tariffs containing proposed general increases of existing rates on classes and commodities, varying somewhat in amount as to the different articles, but said to approximate about 5 per cent. Numerous protests were filed against these proposed increases, which, according to the tariffs, were to become effective November 12 and at later dates. The Commission, by order duly entered November 4, suspended the operation of these tariffs for 120 days, the maximum period prescribed by the statute for suspension in the first instance, and an inquiry has been entered upon as to the propriety of the proposed increased rates.

* * * * *

SAFETY APPLIANCES.

During the fiscal year ended June 30, 1913, 195 employees were killed and 3,361 employees were injured while coupling and uncoupling cars. The corresponding figures for the preceding fiscal year were 192 and 3,234, respectively. Casualties caused by collisions with overhead and side obstructions and falling from and getting on and off cars resulted in 721 deaths and 18,257 injuries to employees. The corresponding figures for last year were 704 deaths and 15,721 injuries.

From the tabulated summary appended to the report of the chief inspector of safety appliances to the Commission it appears evident that in many cases cars are hauled from terminals and repair points in a defective condition when minor repairs to safety appliances would render them conformable to the requirements of the statute. This is due to inadequate inspection and failure to provide repair facilities at all essential points. This inefficient inspection service was noted in the Commission's last annual report, and while the situation has recently been somewhat remedied there is still room for improvement.

Since the publication of the last annual report a considerable number of cars have been made to conform to the standards prescribed by the Commission in its order of March 13, 1911, pursuant to the provisions of the act of April 14, 1910. The ratio of the cars already equipped, however, to the total number of cars to be equipped is still unduly small, and unless the work of equipment is greatly expedited it can not be completed within the time prescribed.

During the fiscal year ended June 30, 1913, 191 cases, involving an aggregate of 626 violations of the safety-appliance act, were transmitted to the several United States attorneys for prosecution. Cases comprising 91 counts were tried in court, of which 56 counts were

decided in favor of the Government. Of the remaining 35 counts originally decided in favor of defendants, appeals have been taken by the Government as to 31. The carriers confessed judgment during the year as to 448 counts. Penalties aggregating \$56,800 were collected, and additional penalties in the sum of \$19,800, in addition to costs previously assessed by the courts, were, on July 1, 1913, pending payment by the carriers.

The tabulated summary appended to the report of the chief inspector of safety appliances to the Commission shows the penalties paid by the various carriers for their respective violations of the safety-appliance, hours-of-service, and ash-pan acts, as reported by the Solicitor of the Treasury prior to November 1, 1913. This table shows an aggregate of all penalties collected as indicated of \$480,962.14.

* * * * *

ASH-PAN ACT.

During the fiscal year ending June 30, 1913, three cases involving five violations of the ash-pan act were transmitted by the commission for prosecution. Defendants confessed judgment during the year as to 10 counts; 1 count was tried in court, resulting in a verdict for the defendant. Penalties to the amount of \$1,200, exclusive of costs, were collected and paid into the Treasury, and additional penalties in the sum of \$1,000, exclusive of costs previously assessed by the courts, were on July 1, 1913, pending payment by defendants.

HOURS-OF-SERVICE ACT.

During the fiscal year ending June 30, 1913, 306 cases, involving an aggregate of 3,499 violations of the hours-of-service act, were transmitted to the several United States attorneys for prosecution. During the same period the carriers confessed judgment as to 1,750 counts. Of the 455 counts which went to trial, 186 resulted in favor of and 269 adversely to the Government. Of the latter, 214 counts have been appealed by the Government, and 63 of the 186 counts originally decided in favor of the Government have been appealed by defendants. Penalties aggregating \$100,361.14 were collected, and additional penalties to the amount of \$32,350, in addition to costs previously assessed by the courts, were on July 1, 1913, pending payment by the carriers.

Since the publication of its last annual report the Commission has prepared and published a statistical analysis of the various instances, as exhibited by the carriers' monthly reports, in which employees of railroads were on duty during the fiscal year ending June 30, 1913, for longer periods than those permitted by the hours of service act.

During the year in question 1,222 railroads filed complete reports. Of these, 737 submitted each month certificates under oath to the effect that no specific instances of excess service had occurred on their respective lines. The remaining 485 carriers who submitted reports for each of the 12 months included in the fiscal year reported an aggregate of all classes of excess service of 301,743 instances in which employees were on duty for longer periods than those prescribed by law.

The carriers' reports have been particularly scrutinized with a view to determine the volume of excess service attributable to causes which might have been prevented. The statistics just published by the Commission show the number of instances in which employees in train service were on duty more than 16 consecutive hours by reason of each of 20 principal causes. These data show also the number of such instances attributable to causes directly affecting the trains on which the men involved were at the time employed, as compared with the number of such instances as to each classification, in which delays to other trains contributed to such excess service. The tables show also a classification based upon the time of the occurrence of contributing delays; that is, whether such delays occurred before or subsequent to 14 hours from the beginning of the various periods of service.

The interested carriers have been furnished with copies of these analyses, and the results already accruing from their preparation have been most gratifying. Many cases of marked improvement have appeared, the most notable being a reduction in the number of cases of excess service, on an important line of railway, from 2,024 to 84 within a period of two months.

Great diversity of opinion prevails among the courts as to the proper penalty to be assessed for violation of the hours of service act, penalties ranging from 1 cent to \$250 per count having been assessed in actual cases.

The commission therefore respectfully renews its former recommendation that the penalty of "not to exceed \$500" prescribed for violations of the statute be changed to a fixed and determinate sum, or that a minimum penalty of \$100 be established.

The number of instances wherein delays causing excess service are attributed to "hot boxes," "leaky flues," "broken drawbars," and such like causes, is still unduly large, and it is again recommended to the Congress that the terms of the proviso in section 3 of the hours of service act shall be so amended as to clearly and specifically define excepted causes that shall be considered to excuse excess service.

* * * * *

INVESTIGATION OF ACCIDENTS.

Conditions disclosed by its investigation of train accidents have confirmed the conclusions stated by the Commission in its last annual report to the Congress and emphasized the need of further action by the Federal Government to provide greater safety for travelers and employees upon railroads.

During the year ending June 30, 1913, a total of 76 train accidents were investigated by the Commission. These accidents comprised 51 collisions and 25 derailments, and caused the death of 283 persons and the injury of 1,880 persons. The collisions investigated were responsible for 221 deaths and 1,174 injuries, and the derailments caused 62 deaths and 706 injuries.

The Commission again is compelled to note the exceedingly large proportion of train accidents due to dereliction of duty on the part of employees. Fifty-six of the accidents investigated during the year, or nearly 74 per cent of the whole number, were directly caused by mistakes of employees. These mistakes were of the same nature as those noted by the Commission in its last annual report, namely, disregard of fixed signals; improper flagging; failure to obey train orders; improper checking of train register; misunderstanding of orders; occupying main track on time of superior train; block operator allowed train to enter occupied block; dispatcher gave lap order or used improper form of order; operator made mistake in copying order; switch left open in face of approaching train; excessive speed; failure to identify train that was met.

These errors are exactly the ones which figure in the causes of train accidents year after year. Their persistence, leading always to the same harrowing results, points inevitably to the truth of one or the other of the following alternatives: Either a great majority of these deplorable railroad disasters are unavoidable or there exists a widespread lack of intelligent and well-directed effort to minimize the mistakes of employees in the operation of trains. It is not believed that all those accidents which are caused by the mistakes of employees are unavoidable. It is quite true that man is prone to error, and as long as absolute reliance is placed upon the human element in the operation of trains accidents are bound to occur, but until it can be shown that all reasonable and proper measures have been taken for its prevention no accident can be classed as unavoidable.

All of the mistakes noted above are violations of simple rules, which should have been easily understood by men of sufficient intelligence to be entrusted with the operation of trains. The evidence is that in the main the rules are understood, but they are habitually violated by employees who are charged with responsibility for the safe movement of trains. The evidence also is that in many cases

operating officers are cognizant of this habitual disregard of rules and no proper steps are taken to correct the evil. Many operating officers seem to proceed upon the theory that their responsibility ends with the promulgation of rules, apparently overlooking the fact that no matter how inherently good a rule may be, it is of no force unless it is obeyed. On very many railroads there is little or no system of inspection or supervision of the work of train service employees so far as pertains to those matters which vitally affect safety. Employees are not examined on the operating rules except at the time of their promotion, and only the most perfunctory efforts are made to determine their fitness to perform the duties assigned to them from time to time.

This lack of supervision and inspection with respect to matters affecting the safety of trains is unexplainable when the careful supervision of all matters directly affecting the revenue of the roads is considered. The auditing and checking systems used for detecting the dishonesty of employees are marvels of ingenuity and careful attention to detail, but means of determining whether trains are operated in accordance with the requirements of safety and in conformity with the rules are almost entirely lacking. Road foremen are employed to supervise the work of enginemen and to instruct them in their duties, but such supervision and instruction pertain mainly to matters affecting the proper working of engines so as to economize in the use of fuel, oil, and other supplies; instruction on the rules is either entirely neglected or made secondary to matters of economy. Instruction in the use of the air brake is quite general, but this, again, is mainly for the purpose of improving practice in the direction of economy by eliminating shocks and break-in-twos in the handling of trains, thus reducing the money loss caused by damaged equipment and lading. The prevention of accidents by a strict observance of operating rules means not only the saving of human life but of large sums of money as well. It would seem, therefore, that adequate inspection and supervision of the work of employees to insure safety in operation would be amply justified from the standpoint of economy alone.

In previous reports the commission has recommended legislation requiring the standardization of operating rules. It is vital to the safe movement of trains that rules should be explicit and uniform in character, so that they may be easily understood and that there may be no doubt as to their application. To this end Federal legislation is necessary. Such legislation also should require proper supervision of employees to insure that the rules are obeyed, as well as systematic instruction and examinations at stated intervals to make certain that no employee is permitted to be in a responsible position unless he is thoroughly familiar with his duties and competent to perform them.

One of the prominent causes of rear-end collisions is improper flagging, many cases of which can be directly traced to the indefinite nature of the standard flagging rule in force on a majority of the roads. This rule leaves the matter of safe flagging entirely to the judgment of the flagman. Under such a rule, when men of slight experience are employed as flagmen, as is frequently the case, errors of judgment are bound to occur and collisions are likely to follow. Investigations into a number of collisions due to improper flagging have shown that the men at fault were so lacking in experience that they could not reasonably have been expected to exercise good judgment nor appreciate the full responsibility of their position. When such men are required to work under the direction of indefinite and ambiguous rules, it can not be said that proper measures have been taken to avoid accidents.

Seven of the collisions investigated during the year were caused by the failure of enginemen to obey the indications of block signals. One serious derailment also was due to this cause. In these 8 accidents 78 persons were killed and 205 were injured. Disobedience of signal indications on block-signalized railroads is one of the most serious phases of the accident situation. Such disobedience often occurs in connection with the movement of important high-speed passenger trains, and when it results in a collision or derailment a most deplorable casualty list is its invariable accompaniment. Fourteen of the investigated accidents which have occurred on block-signalized roads since July 1, 1911, were caused by enginemen running by stop signals or failing to reduce speed as directed by caution signals. In these 14 accidents 105 persons were killed and 311 were injured. In 7 of these accidents the culpable enginemen themselves were killed.

No adequate reason can be offered for these serious lapses from duty by men who in many cases suffer death as a consequence. Frequently it is hard even to suggest a plausible explanation for the disobedience of signal indications. That they are disobeyed, however, is a fact, and the lives that are annually sacrificed from this cause call loudly for some means of arresting its results. The most disastrous accidents of this character occur on roads equipped with modern systems of automatic block signals, where elaborate precautions to prevent accidents (short of guarding against the consequences of signal disobedience) have been taken. The trains involved in these lamentable disasters generally are operated by trusted employees of long experience. But the record abundantly proves that even splendid signal equipment and admirable discipline, coupled with long experience and high moral character on the part of employees, can not prevent the occasional man failures which produce such fatal results. These facts are brought to the attention

of the Congress, with the suggestion that these man failures indicate the necessity for the development and perfection of some system of automatic train control to be used in connection with existing signal systems. In its annual reports for several years past the commission has called attention to the desirability of legislation requiring the use of the block-signal system.

High speed was an important contributing cause of several serious accidents during the past year. On many roads there is no limit to the speed at which passenger trains are allowed to run. Enginemen are thus encouraged to run their trains at excessive speed in an effort to make up time lost on schedules that are in many cases already sufficiently fast for safety. Such high speed is especially dangerous in times of fog or storm, when signals can be seen but a comparatively short distance. The maximum allowable speed of trains on all roads should be established at a safe limit, and it should not be left entirely to the judgment of enginemen to determine whether or not this limit is exceeded. There are devices readily available which will indicate to an engineman the speed at which his train is running.

In its last annual report the Commission noted that the railroads were making progress in the substitution of steel and steel under-frame passenger cars for those of wooden construction. The superiority of these modern cars over the old-style wooden cars has been amply demonstrated by their performance in both collisions and derailments, and to insure that all carriers make proper efforts to procure these modern cars legislation should be enacted prohibiting the use of wooden cars in high-speed through-train service after a certain date. Reasonable time should be given the carriers for compliance with the provisions of any law of this kind, and its application in the first instance should be confined to important high-speed trains. There are a great number of wooden cars now in service, and the carriers should be permitted to make use of these cars on branch lines and in local service until they can be replaced by steel equipment, but the law should provide that all new cars constructed after a certain date should be made entirely of steel or of steel under-frame construction of approved design.

Bad conditions of track and roadway, to which the Commission called attention in its last annual report, are responsible for many derailments. Such conditions, as well as unsafe operating practices which have been disclosed by these investigations, demand closer supervision in the interest of safety than the Commission is empowered by existing law to give them. The present statutes dealing with the safety of travelers and employees upon railroads do not authorize the Commission directly to make investigations with respect to the physical conditions and operating practices existing on railroads, and the only knowledge pertaining to such matters which

the Commission now obtains is gained through its investigations of accidents. It should also be noted that whenever unsafe conditions and practices are disclosed, as the result of an investigation following an accident accompanied by numerous fatalities, the Commission is without authority to order their correction. It can only call attention to all the facts, conditions, and circumstances attending an accident and make recommendations with respect thereto, relying upon the force of public opinion to bring about the necessary reforms.

Inasmuch as the only purpose of investigation is to learn the true causes of accidents, so that such causes may be eliminated as fully as practicable, it is manifestly impossible for the Commission fully to accomplish such purpose unless empowered by law to enforce its recommendations. Furthermore, the Commission should be authorized to conduct independent investigations with respect to all matters affecting the safety of railway travel, the object being to prevent accidents as far as possible rather than, as at present, merely to point out the causes of accidents after their occurrence. There is particular need for an investigation of the conditions surrounding the use of steel rails and car wheels upon railroads. In its last annual report the Commission called attention to its investigations of accidents involving broken rails, in which it had received valuable aid from the Bureau of Standards of the Department of Commerce. These investigations have continued and have emphasized the need of information pertaining to track and rail conditions with respect to the vastly increased wheel loads consequent upon the use of heavier locomotives and cars and higher rates of speed. As was pointed out in a recent report of the Commission, covering its investigation of an accident caused by a broken rail: "It is difficult to refer to a more flagrant example than that of steel rails where definite knowledge of the actual fiber stresses made use of in service is lacking. The loads which are placed upon the columns of buildings are known with reasonable certainty. Strain sheets show the stresses with which the members of bridges are loaded, and the details of such structures are carefully designed to keep within what are believed to be safe loads. The strength of elevator ropes, on which we trust our lives, is known and a careful margin maintained between the breaking load and the allowable working load. These illustrations of the use of structural materials are relatively simple examples when compared with the complex conditions which attend the use of steel rails, emphasizing therefore the necessity for ascertaining so far as may be the working stresses in steel rails."

INSPECTION OF LOCOMOTIVE BOILERS.

The tabulated data contained in the report of the chief inspector of locomotive boilers show a marked decrease in the number of casualties due to failure of locomotive boilers and their appurte-

nances and a substantial improvement in the condition of such equipment.

A reduction of over 60 per cent in the number killed and 10 per cent in the number injured by failures of locomotive boilers and their appurtenances is shown during the fiscal year ending June 30, 1913, as compared with the preceding year.

In accordance with the provisions of section 8 of the law, 592 accidents resulting from failure to locomotive boilers and their appurtenances were investigated by the Division of Locomotive Boiler Inspection during the year; 228 accidents, most of which were of a minor character, were not properly reported by the carriers, therefore an investigation could not be made. Failure to make a proper report has usually been found to be due to the fact that the requirements of the locomotive boiler inspection law were not fully understood by all carriers. It is believed that all are now fully conversant with these requirements, as practically all accidents are now properly reported and investigated.

The practice of conducting a rigid, searching investigation of all accidents to locomotive boilers and their appurtenances sufficiently serious to justify a report, with the sole object in view of determining the exact cause and having the proper remedy applied, has done much to reduce the list of casualties and has directed attention to conditions which previously have been overlooked or ignored. The knowledge that such an investigation will follow every accident is an incentive to the railroad companies to maintain their equipment so that its condition can not be shown to have caused accidents, and is also an incentive to the employees to perform their work in the most efficient and careful manner.

The period since the law became effective has been too brief to permit a comparison to be made which will accurately show its value. It is believed, however, that in addition to the comparison with the preceding fiscal year the following comparison of some of the most serious as well as some of the most frequent accidents during the first and last quarters of the fiscal year ending June 30, 1913, fairly represents the benefits which result from Government supervision over the condition of locomotive boilers and their appurtenances:

Cause.	Accidents during 1913.	
	First quarter.	Last quarter.
Crown-sheet failures.....	18	9
Water glasses bursting.....	36	16
Lubricator glasses bursting.....	11	6
Squirt-hose failures.....	161	64
Flue failures.....	15	11

A summary of the inspection work performed during the year shows the following:

Number of locomotives inspected.....	90,346
Number found defective.....	54,522
Number ordered out of service.....	4,676
Number having pressure reduced to insure proper factor of safety.....	472
Number having seams reinforced by welt plates to insure proper factor of safety	561
Number having the lowest reading of the water glass raised to comply with the law.....	381
Number having the lowest gauge cock raised to comply with the law....	172
Number strengthened by having braces of greater sectional area applied..	281
Number requiring additional support of crown sheet.....	147

It will thus be seen that during the year 6,690 locomotives were either held out of service for repairs or ordered changed and strengthened to conform to the requirements of the law.

The number of locomotives found defective, as shown above, viz, 54,522, does not indicate that this number of locomotives were found to be in violation of the law, but they were found to contain defects which should be remedied before the locomotives were again placed in service. The number found in direct violation of the law is represented by the number ordered out of service in accordance with section 6 of the law, which requires the district inspectors to issue a written order holding the locomotive for repairs when one is found that does not meet the requirements of the law or rules. No formal appeal from the action of any district inspector has been filed during the year. This, in view of the vast amount of work performed and the number of locomotives on which repairs were ordered, shows that while the inspectors have been diligent they have also used discretion and good judgment in the enforcement of the law. It is believed that it also shows the existence of a spirit of cooperation and an earnest effort to comply with the requirements of the law on the part of a large majority of railroad officials.

Specifications for practically all locomotive boilers in service were filed within the time prescribed by the law, but the variation in design and the widely different methods of calculation followed by the various railroads has delayed the work of checking them. Very satisfactory progress is being made in this important work, and it will soon be possible to show accurately the stresses on each part of every locomotive boiler in service.

The results obtained indicate that when the checking is complete it will be necessary in some instances to compare the data shown on the specification cards with actual measurements in order to insure the accuracy of the information furnished.

Specifications are filed for all new locomotive boilers before they are put in service, and when repairs are made on boilers now in

service which in any way affect their strength, the changes are reported on a suitable form; therefore, our records are kept up to date.

Shortly after the district inspectors of locomotive boilers were placed in the field they began to frequently advise that they were finding locomotives in service with serious defects, such as sharp or badly worn flanges, flat wheels, cracked or broken wheels, loose wheels or tires, thin or badly-worn tires, excessive lateral motion in engine trucks, drivers, and trailers, broken frames, broken arch bars, broken springs, and other defects which are a fruitful source of accidents and derailments, but which are not covered by the locomotive boiler inspection law or any other law. In fact, it was found to be a common practice on some railroads to continue in service on their line equipment which if offered in interchange by a connecting line would be refused on account of its defective condition.

Although the boiler-inspection law gave no legal authority to act in such cases, it is believed that travelers and employees on railroads are entitled to all the protection against accidents that can be provided. Therefore, inspectors were instructed while making their regular inspections to note any defective conditions on locomotives which were apt to cause accidents, and when such were found to advise the railroad official in charge, and if proper repairs were not promptly made to wire the chief inspector, who would take further action. During the past year 1,568 locomotives having defects of the above-mentioned character, 1,052 of which were defective wheels, have been reported to the Commission and to the railroad officials. It is extremely gratifying to state that a large percentage of the railroad officials appreciate this action on the part of the inspectors and take prompt steps to remedy the defects to which their attention has been thus directed.

PANAMA CANAL ACT.

The Panama Canal Act provides that from and after July 1, 1914, it shall be unlawful for any railroad company or other common carrier subject to the act to regulate commerce to own, lease, operate, control, or have any interest in any common carrier by water with which said railroad or other carrier does or may compete for traffic. It authorizes the Commission to determine the question of fact as to competition or possibility of competition either on the application filed by the carrier or upon the Commission's own motion and to extend by order the time during which such service by water may continue to be operated beyond July 1, 1914.

The Commission has been gathering information as to existing conditions affected by this act, but the first and only application from a carrier for relief thereunder was recently filed.

In order to avoid congestion immediately preceding the date set in the act, the Commission has issued a circular to all carriers announc-

ing that applications for extension of time during which such water service may continue to be operated beyond July 1, 1914, must be presented to the Commission not later than March 1, 1914.

VALUATION.

By the act of March 1, 1913, the Commission is required to value the property of all common carriers subject to the act to regulate commerce. The valuation act provides that this work shall be begun within 60 days, and that a report shall be made to each regular session of Congress showing the progress made.

For the purpose of executing the provisions of this act the Commission organized, within the 60 days, a division of valuation, corresponding with its divisions of statistics, accounts, tariffs, etc. Since, after the initial valuation has been made the Commission is required to keep the same up to date, this division will be permanent and will embrace an important part of the work of the Commission.

The act provides that an inventory shall be made of the property to be valued, and that the Commission shall ascertain and report the cost of reproduction new, and the cost of reproduction less depreciation. This requires the identification and examination of the property by the engineers of the Commission and is a work of great extent and detail. For the purpose of executing this provision of the act the United States has been divided into five sections, by States, each section embracing approximately 50,000 miles of railway, and so distributed that work can be conducted both during the summer and the winter months. These divisions are as follows:

Eastern district.—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, District of Columbia, Virginia, West Virginia, and North Carolina.

Central district.—Michigan, Wisconsin, Minnesota, Iowa, Illinois, Louisiana, and Arkansas.

Western district.—North Dakota, South Dakota, Nebraska, Colorado, Kansas, Missouri, Oklahoma, and Texas.

Southern district.—Ohio, Indiana, Kentucky, Tennessee, Alabama, Mississippi, Georgia, South Carolina, Florida, Panama, and Porto Rico.

Pacific district.—Montana, Wyoming, Utah, Idaho, Nevada, Washington, Oregon, California, Arizona, New Mexico, and Alaska.

The Commission has appointed five principal engineers, one of whom has been placed in immediate charge of each of these divisions. The five together constitute an engineering board which will formulate general plans for the prosecution of the work and supervise the execution of those plans, thus securing the necessary uniformity.

We have also appointed five other engineers, known as district engineers, one of whom has been assigned to each one of the above divisions. The district engineer will be constantly in his district and will have general charge of the work in the absence of his immediate superior.

Headquarters have been established in each district as follows: eastern district, Washington; central district, Chicago; western district, Kansas City; southern district, Chattanooga; Pacific district, San Francisco. The principal engineer, the district engineer, and their engineering staff will be located at these headquarters.

Unless exception is made by Executive order, all persons employed in this valuation work must come through the Civil Service Commission. It was our first thought to apply for an Executive order covering a sufficient number of engineers and accountants of different grades to at once begin work in the field and in certain railroad offices, but upon consultation with the President this plan was abandoned. An Executive order was issued for the appointment of a director, an advisory board of not more than five members, the five principal engineers and the five district engineers above referred to, and also for a chief accountant and a superintendent of land appraisals, but all other engineers and accountants must be obtained under the test of a competitive examination.

The Civil Service Commission at once made arrangements for the necessary examinations, but, although we are satisfied that this work has been pressed with all possible diligence, a considerable time has necessarily been occupied in the preparation of eligible lists. There were nearly 6,000 applicants for the position of senior engineer alone, and each one of these papers must be carefully examined and marked. In fact, the roll of engineers of the higher grades was not available until October 23; the junior roll, including engineers of lower rank, was opened on November 20.

The act requires the Commission to ascertain and report the original cost of the construction of these properties to be valued, the amount of money which has gone into them, and the sources from which it has been derived; all of which will require the employment of many trained accountants. While the Commission hopes to avail itself to a limited extent of accountants already in its own employ, whose special fitness for this work has been demonstrated, still in the main this accounting force must come through the Civil Service Commission. These examinations have been held and the roll is substantially completed.

Examinations for senior telephone and telegraph engineers closed on December 1; those for the junior roll occurred on December 3. Examinations for senior land appraisers close December 22, while those for the junior grade take place January 7, 1914.

It will be seen, therefore, that up to very recently it has not been possible to employ either engineers or accountants, except the 10 engineers already mentioned, and that certain classes are not yet available.

In the conduct of this work it will be necessary to require from the carriers such plans and maps as will identify the property to be inventoried, and also certain additional information. In some instances the necessary maps and plans are already in existence; in others such documents as exist are incomplete; while in still other cases there is practically nothing whatever of this kind. It is a matter of very great importance to determine just what shall be done in order to give the Government what it requires for the prosecution of this work and at the same time not to impose any unnecessary burden upon the carriers. Our engineers have been in repeated conference with representatives of the railroad, the telegraph, and the telephone companies which, by the act, are required to cooperate with the Commission, and have examined railroad and other offices for the purpose of ascertaining what information now exists and in what form. An order specifying the documents and information which carriers will be required to furnish has been formulated and will be served in the near future.

Rules for the organization and prosecution of the work have been formulated, the details have been worked out, and preparations made, so far as possible, with a view to entering upon the work as soon as the necessary expert force can be employed.

While the engineering rolls are now ready, it has not seemed to us nor to the Civil Service Commission that we could safely rely entirely upon the results of these examinations. Therefore when names are certified to us from the Civil Service Commission we inquire still further into the fitness of these persons, in view of the great responsibility of the positions which these engineers of the higher grade will occupy. Their standing in the communities where they have lived is investigated and their record with past employers. All this requires a certain amount of time.

It is also necessary, before determining what salaries should be attached to the various engineering and accounting positions which will be created, to ascertain for what compensation these men who are available from the civil-service rolls can be obtained. We also find that many of these eligibles are now engaged in other occupations, which they can not lay down upon a moment's notice. On the whole, we finally decided not to attempt to actually begin work in the field or at the railroad office until after the holidays. It is expected that actual operations will be begun early in January.

The present plan is to select a railroad in each one of these divisions which can be valued in an experimental way. An attempt will be

made to choose railroads of different classes so that as great a variety of problems will be presented as possible. This initial work will be undertaken with deliberation, and no attempt will be made to unduly expand or hasten operations until the result of these preliminary studies can be appreciated. After a few months of this kind of work in different parts of the country and under varying conditions the Commission and its engineers will better understand the exact difficulties which must be met and the methods by which the work can be prosecuted to the best advantage.

To make more certain of its ground the Commission referred its scheme of organization and its plans for the beginning of this work to a committee consisting of John Skelton Williams, Charles F. Staples, Henry C. Adams, Edward W. Bemis, and Oscar T. Crosby. This committee, after mature consideration, approved our plans with certain suggestions for modification, most of which have been adopted.

It will be seen that up to the present time our work in this department has been that of preparation. The Commission had hoped that its experts would be actually engaged in the field and the office before this date, and undoubtedly that would have been true had we been free to employ labor in the open market. Nothing, however, has been really lost. The time of those engineers already employed has been well occupied, and we are now satisfied that while there has been some delay in the beginning, the engineering and accounting force finally assembled under the competitive system will be more efficient than would have otherwise been obtained. This valuation work is one of infinite detail, and these details must all be finally brought together and coordinated. Without perfect organization there can be neither efficiency nor satisfactory result. It is also a new work which must pass through a process of development. When once the organization is perfected and the nature of the work fairly understood the force will permit of an almost indefinite expansion and the work itself can proceed with expedition.

PARCEL POST.

The act approved August 24, 1912, establishing the parcel post contains the following provision:

The classification of articles mailable as well as the weight limit, the rates of postage, zone or zones and other conditions of mailability under this act, if the Postmaster General shall find on experience that they or any of them are such as to prevent the shipment of articles desirable, or to permanently render the cost of the service greater than the receipts of the revenue therefrom, he is hereby authorized, subject to the consent of the Interstate Commerce Commission after investigation, to reform from time to time such classification, weight limit, rates, zone or zones or conditions, or either, in order to promote the service to the public or to insure the receipt of revenue from such service adequate to pay the cost thereof.

Acting under this provision, the Postmaster General has applied to this Commission on various occasions for its consent to make changes in the rates of postage and conditions of mailability in the parcel post. The first of these applications related to the rates for transportation of parcels from points in the United States to points in Alaska; the second was for permission to dispense with the distinctive parcel-post stamp; the third was for permission to consolidate the first and second zones and to reduce the rates and increase the weight limit therein; the fourth was to add books in packages weighing in excess of 8 ounces to the articles mailable under the parcel-post system; the fifth was to change the rates and regulations applicable to shipments of gold to and from points in Alaska in order to secure revenue commensurate to the cost of the service; the sixth was to increase the weight limit for the first and second zones from 20 pounds to 50 pounds and for the other zones from 11 pounds to 20 pounds and to reduce the rates to the third, fourth, fifth, and sixth zones. All of these changes have been consented to by the Commission.

The act provides no standard or rule of action for the Commission. It apparently contemplates that when the Commission is satisfied that the change for which consent is requested will remove prevention to shipment of articles desirable, or will promote the service to the public, or secure receipt of revenue adequate to pay the cost of the service, consent will be given.

The Commission has not construed the provision for investigation as requiring a public hearing, nor does it propose to do so. It will, however, when the particular case in hand suggests the propriety of it, feel entirely free to order a public hearing.

One of the general duties of the Commission is to regulate the practices and charges of express companies. It has not felt called upon to consider the interests of these companies in any respect when considering applications of the Postmaster General to change parcel-post rates. The rates of the express companies have been recently revised by this Commission, and a very substantial reduction therein has been made. The Commission feels that it should be relieved from the duty of determining the extent to which the parcel post should supersede the express system which it has regulated. It is easily conceivable that a proposition for reduction of parcel-post rates might seem to the Commission to threaten the destruction of the existing express companies before adequate provision has been made by the Government for taking over all of such business. In such case the Commission would be in grave doubt as to its duty under the present law.

It is recommended that the Commission be relieved of all duties in connection with the parcel post. If that is not done, the duties to be performed by the Commission, as well as the standards to be applied to it, should be more clearly stated.

RECOMMENDATIONS.

In the present state of the law the statute of limitations for the beginning of proceedings by shippers to recover reparation on account of unreasonable rates is fixed at two years. The statute of limitations for the initiation of criminal prosecutions by the Federal authorities for failure to collect or to pay the full amount of legally established transportation charges is three years. The statutes of limitations for the beginning of actions by carriers to recover unpaid transportation charges from shippers are provided by the several States and vary in the different States. Generally, however, they provide longer periods than is provided in the act to regulate commerce.

From this instances of gross injustice result. Through inadvertence carriers sometimes fail to present bills to shippers for the legal amount of freight charges due. Such errors are discovered more than two years after the shipment has been delivered and all causes of action thereunder have accrued. The shipper thus finds himself liable to prosecution for failure to pay the legal rate, but, owing to the two-year statute of limitations, he is barred from beginning a proceeding to test the reasonableness of the charges assessed against him.

We therefore recommend providing one period for beginning of all actions relating to transportation charges subject to the act. A provision should be made that all actions by carriers subject to the act for the recovery of compensation for any service subject to the act shall be begun within three years from the completion of such service, and that all complaints for the recovery of damages shall be filed with the Commission within three years from the completion of the service as to which damages are claimed, and not after.

In a few instances undue preference has been given by failure to demand payment for services rendered by carriers for unreasonably long periods as to certain shippers. We recommend providing in the act that a carrier which fails to demand payment of charges for any service in the transportation of property within the period of 90 days from the time of the delivery of the shipment shall be deemed guilty of giving a rebate to the shipper.

The duties of the Commission are enlarged from time to time and expansion of activities necessitates additional employees. The question of housing of the Commission will become more important and acute in the not-distant future. We therefore again recommend that the Congress either provide for the erection of a building for the Commission or authorize the Commission to enter into a lease of suitable quarters for a period of 10 years. We are confident that if authorized to enter into such contract we can obtain quarters in every way more desirable and at greatly reduced rental.

This Commission has always been of the opinion that suits brought to enforce or set aside its orders should be under its supervision. Until somewhat recently the practice was to leave these cases entirely in the hands of the Commission and its attorneys. The making of the order and the defense of that order in court involve the same considerations. The Commission is familiar with the records, understands the purpose for which the particular order was made, and the effect of that order upon other rate situations. The questions presented in court, while nominally legal, are in reality of an expert character with which the ordinary lawyer has but little acquaintance. The essential thing is to present to the court the facts in the case and the point of view of the Commission. If a stranger assumes the conduct of these suits he may by failure to properly present the issues and considerations or by presenting them improperly sacrifice the order itself and secure from the court rulings which would be embarrassing in future cases. By declining to act he might even overrule the Commission entirely.

At the present time the Department of Justice is invested with primary authority in the conduct of such suits, but the Commission has the right to intervene. For the reasons above suggested, among others, we have felt it necessary to maintain a staff of attorneys and to appear in all cases in which our orders are drawn in question, both before the lower courts and in the Supreme Court. Since the attorneys for the Department of Justice have also appeared, this has resulted in a duplication of work, in unnecessary expense, and sometimes in confusion, which has not contributed to the proper presentation of the case. Jurisdiction of such cases has now been transferred from a single court to numerous courts.

We feel that all suits brought to enforce or set aside an order of this Commission should be brought by or against the Commission and that the Commission should be primarily charged with the duty of presenting such cases in court, subject to the right of the Department of Justice or private individuals to intervene where that is necessary to protect the public or private interests.

We recommend that the Commission be authorized to make orders, after investigation, respecting the construction and maintenance of the physical properties of railroads engaged in interstate commerce and rules and regulations pertaining to the use and operation of such properties.

In previous reports the Commission has indicated the desirability of legislation upon the subject of control over railway capitalization. Without attempting to add to the reasons previously advanced, we renew those recommendations.

The Commission has called attention in several of its previous reports to the importance and necessity of a uniform classification for

the country, and here calls attention to what has there been said and renews those recommendations.

We here again call attention to our recommendations respecting the prevention of accidents, and especially that the Commission should be empowered (*a*) to require the use of block signal systems and (*b*) to require the adoption and use of steel or steel underframe cars in passenger-train service.

At page 14 will be found a recommendation for legislation to make explicit and certain the authority of the Commission to examine all correspondence, files, indexes, and other papers and documents retained by carriers subject to the act.

At page 63 it is suggested that the penalty of "not to exceed \$500" prescribed for violations of the hours of service act be changed to a fixed and definite sum, or that a minimum penalty of \$100 be established. On the same page the Commission renews the suggestion previously made that the terms of the proviso in section 3 of the same act be so amended as to clearly and specifically define excepted causes that shall be considered to excuse excess service.

At page 80 it is suggested that the Commission should be relieved of all duties under the parcel-post law, or that such duties and the standards to be applied be more clearly stated.

All of which is respectfully submitted.

EDGAR E. CLARK.
JUDSON C. CLEMENTS.
CHARLES A. PROUTY.
JAMES S. HARLAN.
CHARLES C. MCCORD.
BALTHASAR H. MEYER.

REPORT

OF THE

UNITED STATES CIVIL SERVICE COMMISSION.

WASHINGTON, D. C., *May 20, 1914.*

SIR: In presenting this, the thirtieth annual report of the commission, attention is invited to the remarkable extension of the competitive system since its beginning in 1883. The positions then affected by the civil-service act numbered 13,789, while to-day there are 282,597 positions required to be filled by the competitive method of appointment. Under nine administrations, of different political faiths, this extension has steadily gone forward by the natural growth of governmental business, by legislation, and by the inclusion by Executive order of additional classes of employees. This extension is more fully shown by the following table, giving the approximate number of competitive classified positions on the respective dates named:

1883.....	13, 789
March 3, 1885.....	15, 573
June 30, 1889.....	29, 650
June 30, 1893.....	42, 741
June 30, 1897.....	87, 108
June 30, 1901.....	108, 967
June 30, 1905.....	171, 807
June 30, 1909.....	234, 940
June 30, 1913.....	282, 597

That the civil-service principle has the support of public opinion is shown by the facts that it has been accepted and proclaimed in all recent national party platforms; that nine States have adopted it for their executive services, and that it is incorporated in the charters of 250 cities. Appointing officers unite in its support as the most important factor in the efficient performance of public business. Thirty years ago decried as an impossible ideal, an impractical theory, and put in operation in only a tentative way, the system stands to-day firmly established on a basis of actual accomplishment.

EXTENT OF THE EXECUTIVE CIVIL SERVICE.

On June 30, 1913, there were 469,879¹ officers and employees in the executive civil service. Of these, 282,597 held positions subject to competitive examination under the civil-service rules, an increase of 65,205 during the year. Of the 187,282 persons whose positions are not subject to competitive examination under the civil-service rules, 10,543 are presidential appointees, 8,423 being postmasters of the first, second, and third classes; 4,707 are clerks in charge of contract postal stations; 72,800 are clerks in third and fourth class post offices; 122 are jointly employed by the railroads and the Railway Mail Service; 7,725 are mail messengers; 12,986 are star route, steamboat, and screen wagon contractors; 28,191 are engaged on the Isthmian Canal work, chiefly as laborers and minor employees; 722 are employees of the Department of Commerce, mostly of the Census Bureau, and 27,283 are unclassified laborers, of whom 6,500 are subject to tests of physical fitness under labor regulations. The remaining 22,203 are excepted from examination under Schedule A, or are subject to noncompetitive examination under Schedule B of the civil-service rules, of whom 963 are employed in Washington and the others in branches of the field service. Few important positions are excepted under Schedule A from examination. Their great variety will be seen by reference to that schedule.

GROWTH OF THE CLASSIFIED SERVICE.

The following statement shows additions to the competitive classified service during the year ended June 30, 1913, aside from mere natural growth under existing provisions of the rules and Executive orders:

BY PRESIDENTIAL ACTION.

State Department employees paid from the appropriation for advancement of commercial and other interests, order of Aug. 24, 1912.....	14
Special employees, Internal Revenue Service, order of Aug. 24, 1912 ²	52
Experts and special agents, Department of Agriculture, order of Aug. 26, 1912.....	112
Fourth-class postmasters, order of Oct. 15, 1912.....	36, 236
Artisans in navy yards, etc., order of Dec. 7, 1912, about.....	20, 000
Cashiers in mints, order of Feb. 20, 1913.....	4
Chief post-office inspector.....	1
Total.....	56, 419

¹ These figures are based upon reports furnished by the several departments to the commission, as required by the civil-service rules. Owing to inaccuracies inherent in the gathering of data for a work of this magnitude and to inadvertent omissions by the departments, the figures must be accepted as only approximate.

² Under an Executive order of Aug. 2, 1913, these positions were removed from the competitive class, and restored to Schedule A.

BY OPERATION OF ACT OF CONGRESS.

Superintendents of melting and refining, Mint Service, withdrawn from Presidential class by legislative act of Aug. 23, 1912.....	3
Private secretaries abolished by Post Office appropriation act of Aug. 24, 1912.....	21
Appointments of assistant agent, warden and deputy wardens, Alaska Fisheries, vested in Secretary of Commerce instead of President by sundry civil act of June 23, 1913.....	4
Total.....	28

BY RECOGNITION BY THE COMMISSION OF RIGHT OF CLASSIFICATION.

Under order of Feb. 24, 1906—	
Laborers classified in Quartermaster Corps (Dec. 21, 1912).....	2
Laborer classified in Bureau of Insular Affairs (Feb. 14, 1913).....	1
Under order of Aug. 12, 1907—	
Long and meritorious service over seas (Apr. 7, 1913).....	1
Under order of Dec. 3, 1908—	
Classified in Army transport service (Mar. 18, 1913).....	1
Under order of May 29, 1899 (now paragraph 10, Subdivision I of Schedule A, pay department at large (Mar. 8, 1913).....	1
Under order of Sept. 30, 1910—	
By advancement of post offices to second class ¹ July 1, 1911.....	219
By advancement of post offices to second class ² July 1, 1912.....	119
By consolidation with classified post offices.....	6
Total.....	350

EXCEPTIONS FROM EXAMINATION.

BY AMENDMENT OF SCHEDULE A.

Officers to aid in important drafting work in the Department of State, order of Aug. 24, 1912.....	8
Employees in Neopit Lumber Mills (Nov. 19, 1912).....	16
Artisans under Navy Department at Cavite, Olongapo, and Guantanamo, Feb. 24, 1913, about.....	1,000
Three experts of advisory board and five members of a board of engineers, under act of Mar. 1, 1913, providing for the valuation of the property of carriers (Apr. 23, 1913).....	8
Private secretary to each head of bureau appointed by the President and not confirmed by the Senate (June 6, 1913).....	1

BY AMENDMENT OF SCHEDULE B.

Assistant engineers under the act of Mar. 11, 1913, providing for the valuation of the property of carriers (Apr. 23, 1913).....	5
--	---

¹ Gross number by advancement July 1, 1911, 273; number excepted by relegation to third class, 54; net increase, 219. (These statistics were not available when the Twenty-ninth Report was issued.)

² Gross number by advancement July 1, 1912, 210; number excepted by relegation to third class, 91; net increase, 119.

BY ACTION OF THE COMMISSION.

Under order of Dec. 1, 1910.....	7
Under paragraph 15, Subdivision I of Schedule A.....	6
On Isthmus under order of Dec. 12, 1904, allowing appointments without examination in the absence of eligibles.....	30
Noncompetitive examination due to failure of applicants to compete.....	1
Total.....	1,082

During the year covered by this report the President issued 91 Executive orders making exceptions to various provisions of the rules, affecting 117 persons. Of these, 21 were private secretaries to postmasters whose positions had been abolished by law and who were given a competitive status as stenographers and typewriters, and 14 were employees of the tariff board, transferred to the competitive service upon its discontinuance. Of the remaining number, 32 had been previously in the service and were allowed reinstatement without reference to the time limitation of one year; 14 were allowed original appointment; and in 7 cases promotions were allowed irrespective of the restrictive requirements of the rules. These orders are set forth in full in the appendix, reasons for the action taken and whether or not they were issued with the concurrence of the commission being stated in each case.

In September, 1912, a desire was evinced on the part of several of the departments to include in the competitive service the positions of attorney and assistant attorney whether so called or under the designation of solicitor. The Secretary of the Interior requested the opinion of the commission. The commission took the view that any action toward bringing these positions into the competitive service should be general in character and that otherwise they should remain in the excepted service. As the opinions of the departments were not uniform, no further action was taken.

EXAMINATIONS AND APPOINTMENTS.

During the year ended June 30, 1913, 35,154 persons were appointed, transferred, or promoted, upon examination to positions in the competitive classified service, and 2,672 persons were transferred, promoted, or reinstated without further examination. Including appointments to the Philippine service, and to positions of mere unskilled laborer, and excluding temporary appointments, 38,713 appointments were made as the result of competition. The number examined, number passed, and number appointed were as follows:

	Examined.	Passed.	Appointed.
Under civil-service rules:			
Original entrance—			
Field service.....	126,999	86,889	32,535
Departmental at Washington, D. C.....	13,026	6,657	1,990
Total.....	140,025	93,526	34,515
Promotions, transfers, and reinstatements through examination.	1,726	785	639
Total under rules.....	141,751	94,311	35,154
Not under Federal civil-service act and rules:			
Philippine service.....	942	546	133
Under labor regulations.....	10,828	9,567	3,426
Total.....	153,521	104,424	38,713
Without further examination:			
Transfers and promotions.....			996
Reinstatements.....			1,676
Grand total.....	¹ 153,521	104,424	41,385

¹ In addition, and upon appropriate official request, the commission examined 1,233 applicants for admission to the District of Columbia service and to the Military and Naval Academies.

Excluding unclassified laborers and persons appointed in the Philippine service, and the 8,554 artisans appointed in the recently classified navy-yard service, the number appointed increased 5,631 as compared with the preceding fiscal year. The increase in the number of appointments of rural carriers, railway mail clerks, and post-office employees was 6,516, and of fourth-class postmasters 3,324. Elsewhere there were fewer appointments this year than last.

EXAMINATIONS—THEIR SCOPE AND CHARACTER.

The commission's examinations may be divided into two main classes, assembled and nonassembled. In the former the competitors are all required to appear at a stated time and at stated places, and are examined by means of written tests relating to the duties to be performed. In many of these examinations is included a rating of the competitor's education and experience, while in some of them physical condition is either a prerequisite for admission or a separate ratable subject. Examinations of this kind are held to provide eligibles to fill vacancies in practically all positions paying less than \$1,800, except vacancies in mechanical trades positions. For the latter positions it is impracticable to assign written tests, and a non-assembled examination is given consisting of a consideration of evidence of the competitor's physical ability, secured through a medical examination, and practical experience based upon the competitor's sworn statement and confidential inquiries of his previous employers.

In the case of high-grade positions, paying \$1,800 per annum or more, for which men of actual attainments in special technical, professional, or scientific lines are required, experience has shown that a better grade of competitors can be secured by means of nonassembled examinations than by requiring competitors to assemble for written examinations. As a rule men of the character needed in these posi-

tions are reluctant to appear for written tests. Accordingly for the majority of such positions the examinations consist of a thorough investigation of the education, experience, and fitness of all applicants, sometimes combined with a consideration of their published works or a thesis. The applicant's sworn statements of his qualifications are verified, and information concerning his personality is secured by means of confidential inquiries of his former employers.

For many examinations applicants are required to show a certain minimum education or experience, or both, before admission.

As the competitive system has been extended to include professional, scientific, and technical positions, it has been necessary for the commission to hold examinations to test the fitness of persons to fill these places. For many years, because of its inadequate force of examiners, the commission was forced to rely upon specialists employed in the various departments, to prepare and rate a large proportion of the examinations of this kind. This procedure, which the commission practiced with great reluctance and with the knowledge that it was wrong in principle but which its limited force compelled it to adopt, has been discontinued during the past year. A very large part of this work is now done entirely by the commission's force, but in some cases it is still necessary to call upon the departments for assistance, the commission's examiners cooperating in the work. In addition the commission employs a corps of expert examiners not otherwise connected with the Government service, to prepare questions and rate papers in examinations of a highly technical or scientific nature. These expert examiners are men who are recognized authorities in their particular specialties.

THE APPORTIONMENT.

The civil-service act provides for selections according to grade from among those graded highest in the examinations and requires that appointments in the departments at Washington shall be apportioned among the States and Territories according to population. As has been pointed out in previous reports, these two provisions are coordinate and the observance of each is required "as nearly as the conditions of good administration will warrant." The method of applying the apportionment in certification to fill scientific and technical positions was fully explained in the twenty-eighth report. This method was subsequently extended to apply to stenographer and typewriter positions paying more than \$900 a year.

During the present year the following method of certification to fill vacancies in other apportioned positions has been adopted:

1. Certification is made of the highest eligibles from one-half of the entire group of States and Territories that have not received their full share of the total number of appointments actually made (if the number of such States and Territories is uneven,

the lesser number is taken) and this method is followed until all the eligibles from such States and Territories have been certified with average percentages of as much as 80.

2. After all the eligibles described in (1) above have thus been certified, then certification is made in the same manner from one-half of the remainder of such group of States and Territories.

3. After all the eligibles described in (2) above have thus been certified, then certification is made in the same manner from the remainder of such group of States and Territories.

4. After all the eligibles described in (3) above have thus been certified, then certification is made as described in (1) above down to and including eligibles with percentages of as much as 75.

5. After all the eligibles described in (4) above have thus been certified, then certification is made as described in (2) above down to and including eligibles with percentages of as much as 75.

6. After all the eligibles described in (5) above have thus been certified, then certification is made as described in (3) above down to and including eligibles with percentages of as much as 75.

7. After all the eligibles described in (6) above have thus been certified, then certification is made from the other States, in their order under the apportionment, of eligibles with an average percentage of as much as 75 down to the two States having the largest excess of their share of appointments and the District of Columbia.

8. After all the eligibles described in (7) above have thus been certified, then certification is made of the highest remaining eligibles from the entire group of States in arrears of their share, in the order of percentage, who have percentages of as much as 73.

9. After all the eligibles described in (8) above have thus been certified, then certification is made as described in (7) above down to and including eligibles with percentages of as much as 73.

10. After all the eligibles have thus been certified with averages of as much as 73 down to the two States that have received the greatest excess of their share and the District of Columbia, then certification is made of the highest remaining eligibles from the entire group of States and Territories in arrears of their share; and after all eligibles from such group of States and Territories have been certified, then certification is made from each State and Territory in its order under the apportionment.

This procedure was adopted with the view of meeting the objections raised by appointing officers to certifications issued under the preceding method, while at the same time preserving the apportionment as required by the act. The present method insures the certification of most of the eligibles with the higher ratings before those with lower averages, while at the same time the principle of the apportionment is jealously guarded. No noticeable change in the relative positions of the States with reference to the apportionment has been produced, while a higher grade of eligibles has been certified for appointment.

TEMPORARY APPOINTMENTS.

The number of temporary appointments to competitive classified positions, both in Washington and outside of Washington, increased 1,572 during this fiscal year.

Temporary appointments are of two general classes, those pending the filling of positions permanently and those for particular jobs of work, at the completion of which the services of the employees are no longer required. The procedure in making these appointments conforms as far as practicable to that followed in filling permanent positions. The requirement of apportionment is not applied in certification for temporary appointment. Less than a fourth of the temporary appointments in Washington were made outside the registers of eligibles, and these only for relatively brief periods while examinations were being held.

The average length of appointments made pending the filling of positions permanently is less than two months; of those made for job work, about four months in Washington and about one month outside of Washington. The shorter average period of job appointments outside of Washington is due to the thousands of appointments made in the various field services for periods of only a few days. Very few appointments have extended beyond six months. The circumstances in such cases have been unusual and the extension was necessary for the completion of the job of work for which the person was originally appointed.

REMOVALS.

In an act of August 24, 1912, the provisions of the civil service rules bearing upon removal were in part made statutory. The act provides:

That no person in the classified civil service of the United States shall be removed therefrom except for such cause as will promote the efficiency of said service and for reasons given in writing, and the person whose removal is sought shall have notice of the same and of any charges preferred against him, and be furnished with a copy thereof, and also be allowed a reasonable time for personally answering the same in writing; and affidavits in support thereof; but no examination of witnesses nor any trial or hearing shall be required except in the discretion of the officer making the removal; and copies of charges, notice of hearing, answer, reasons for removal, and of the order of removal shall be made a part of the records of the proper department or office, as shall also the reasons for reduction in rank or compensation; and copies of the same shall be furnished to the person affected upon request, and the Civil Service Commission also shall, upon request, be furnished copies of the same. * * *

Upon the request of several of the departments the commission set forth its views concerning the effect of this statutory provision upon existing rules, expressing the opinion that section 2 of Rule XII was superseded by the statute, and that therefore cases arising subsequently to the statute were to be considered thereunder and not under the rule.

Regarding the removal of probationers, the commission expressed the view that the practice which existed under section 1 of Rule VII of requiring a full and fair trial in the position during probation, and

of terminating upon notice in writing the services of probationers when their conduct and capacity are not satisfactory, does not appear to be changed by the act; and the probationer may be separated from the service at any time during or at the end of the probationary period without further formality than written notice with statement of reasons.

The commission holds that the law does not contemplate its application to temporary employment.

The act is not regarded as applying to cases of suspension. Where a suspended person is later dropped from the classified service, it is necessary to comply with the requirements of the act.

Under an opinion of the Attorney General of June 23, 1913, the term "classified service" as used in the statute does not include positions excepted from examination under Schedule A of the rules unless such positions have been filled as competitive positions are filled, in which event under Rule II, paragraph 3, the person appointed is entitled to all the rights of a competitive employee.

FOURTH-CLASS POSTMASTERS.

The orders of Presidents Roosevelt, Taft, and Wilson applying the civil-service rules to positions of fourth-class postmaster were a culmination of efforts extending over many years to bring these positions into the competitive service. The order of President Roosevelt in 1908 applied only to the post offices in the States lying north of the Ohio and east of the Mississippi, numbering 13,986. On October 15, 1912, President Taft in an Executive order transferred to the competitive service all other fourth-class postmasters to the number of 36,236, excepting only those in our territorial possessions.

On May 7, 1913, President Wilson issued an Executive order amending the order of October 15, 1912, and the regulations promulgated in accordance therewith. As amended, the regulations provide:

Appointment to offices having an annual compensation of as much as \$180 shall be made in the same manner as provided by the civil-service law and rules for other positions in the competitive classified service: *Provided*, That in the event that for the examination for any such office less than three persons apply, the Civil Service Commission may, in its discretion, authorize selection in accordance with section 2 of these regulations.

For positions paying less than \$180 a year the amendment provides that appointments shall be made by the Postmaster General upon the report of a post-office inspector as the result of an examination, conducted on the ground, of the qualifications of all persons applying for such position after due public notice of the vacancy. The report of the post-office inspector shall be based solely upon the suitability

of the applicant and his ability to provide proper facilities for transacting the business of the office.

The commission is given authority to review the case and recommend the removal of any fourth-class postmaster where it appears that political or religious considerations have entered into his appointment. The commission is also authorized to investigate the case of an applicant, eligible, or appointee at a post office paying less than \$180 a year where sworn statements are filed by property taxpayers or patrons of the office to the effect that he is unsuitable for the position.

By an Executive order of the same date as the amended regulations the commission is required to hold open competitive examinations for all fourth-class post offices paying \$180 a year or more, the incumbents of which have not been appointed upon certificate of the commission or on the recommendation of a post-office inspector under the former regulations. These examinations are to be held by the commission in groups of States as designated by the Postmaster General. Approximately 21,000 offices are affected by this order, and examinations will be held at the rate of about 2,000 offices a month.

In addition to the work involved in providing eligible registers for these 21,000 offices, registers must also be provided to fill vacancies numbering approximately 500 a month occurring in fourth-class offices.

ASSISTANT POSTMASTERS.

The Executive order of September 30, 1910, brought into the competitive class the positions of assistant postmaster at first and second class offices, and provided that no assistant postmaster should receive a competitive status who failed to satisfy the Post Office Department of his capacity for efficient service in the position. There are 2,464 post offices of the first and second classes, and all save about 100 incumbents have been given a competitive status. These exceptions are due to the fact that the persons filling the positions have failed to satisfy the department as to their capacity for efficient service.

When the Executive order was issued there were 2,329 assistant postmasters in offices of the first and second classes. It has been ascertained that at these offices the number of assistant postmasters who had been appointed as such by promotion of competitive employees was 562, or more than 24 per cent. It was a matter of business necessity in the large offices to fill the position of assistant postmaster by promotion, even when the power existed to fill the position without examination. At the 50 largest offices the position in 26 instances had been filled by promotion prior to the Executive order; and of the 24 remaining, 12 appointees had served as assistant postmaster for more than 16 years.

POLITICAL ACTIVITY AND ASSESSMENTS.

POLITICAL ACTIVITY.

While the commission has had the power since 1907 to investigate alleged political activity of competitive employees in any department or office and to make recommendations as to the punishment deemed appropriate to the offense committed, appointing officers have not always carried out the recommendations of the commission. In such cases the Government has been placed in the position of having conducted an investigation and established a violation of its requirements, which has been followed by no punishment or one wholly inadequate to the offense committed. It has been and is the opinion of the commission that its rulings in such cases should be final, subject only to review by the President. A step in the direction of eliminating this defect in the regulations has been taken in recent Executive orders which provide that any rural carrier or fourth-class postmaster taking an active part in politics "shall be removed from the service or otherwise disciplined, recommendation as to the penalty to be imposed in each case to be made by the Civil Service Commission." These orders have resulted in great good and it is believed that still better results would follow if the commission's recommendations were made mandatory throughout the service.

Administrative punishment has been imposed during the year upon violators of the law or rules as follows: Removal or other involuntary separation, 16; reduction, 11; suspension without pay, 3; reprimand, admonition, or warning, 29. Reports of these cases are contained in the appendix.

The number of cases in which it appears that the violation is committed in ignorance of the requirements of the law and rules has decreased, and owing to the publicity given during the presidential campaign to these requirements, and the investigations by the commission, it is believed the restrictions are now well understood throughout the service. The kinds of political activity within the prohibitions of the rule applying to competitive employees are fully and definitely stated in one of the commission's circulars (No. 1236) which is given wide publicity.

The enforcement of restrictions on the political activity of unclassified officers has been left to heads of departments, the commission having no duty in the matter except in case of violations of provisions of the civil-service law and rules. These provisions prohibit the use of official authority, influence, or position to coerce the political action of any person or body; the interfering with or affecting the result of an election; the soliciting or receiving of political contributions; or the discriminating for political reasons in favor of or against subordinates. Except for these restrictions, unclassified

officers have often been tacitly permitted if not encouraged to become active in support of political measures or candidates, and the regulations prohibiting them from engaging in political activity to such an extent as to result in neglect of their duties or to cause public scandal, have not been sufficiently regarded.

The commission recommends an amendment to the rules clearly defining the degree of activity permissible to such officers and giving the commission the same powers with respect to violations of these restrictions as with regard to the political activity of members of the competitive service.

There are certain positions, however, the duties of which are so intimately connected with the policies of the administration that distinction should be made between them and the great mass of local officers throughout the country whose duties are nonpolitical. These positions should be specifically exempted from the operation of such an amendment to the rules.

POLITICAL ASSESSMENTS.

An important judicial decision was rendered in connection with the prosecution of a postmaster of the first class who was indicted for receiving political contributions from employees in the post office. The fact of the receipt of contributions was not denied, the defendant relying on the statement that he acted merely as a messenger for the purpose of delivering such contributions to the persons who alone received them and were concerned in receiving them. The court held that his connection with the receipt of these contributions amounted to being "concerned in receiving," within the meaning of the statute. A conviction was had in this case and the postmaster was separated from the service. Full reports of this case and others are published in the appendix.

CLASSIFICATION OF THE NAVY YARDS.

The President in an order and regulations of December 7, 1912, placed all artisan and supervisory artisan positions at the navy yards and other establishments under the Navy Department in the competitive service and prescribed methods of appointment and promotion similar to those applying to like classes of positions elsewhere. The artisans themselves were to be classified only upon the establishment of capacity for efficient service or examination and recommendation by the commanding officer. The average number of mechanics and laborers employed at navy yards during recent years is about twenty thousand. About four-fifths of this number are skilled men who have been classified in accordance with the President's order.

An act of Congress of 1872 (sec. 1544 R. S.) provided that laborers at navy yards should be employed with reference to skill and efficiency and without regard to other considerations. An act of 1867 protected workmen in navy yards from political assessments or removal because of their political opinions. Regulations giving effect to these provisions of law were adopted in 1891, under which employment at navy yards was based upon satisfactory evidence of qualifications by applicants, but not upon a competitive basis. In 1909 the Attorney General held that as these tests were not competitive examinations the positions were not classified under the civil service law.

Under the former regulations the qualifications of applicants were passed upon by a board of labor employment consisting of commissioned officers.

Under the new regulations each board has as a member one of the commission's district secretaries. The regulations are apparently working smoothly, as no complaints have been received from employing officials or applicants for employment.

LEGISLATION AFFECTING THE CLASSIFIED SERVICE.

The act making appropriation for the support of the Army, approved August 24, 1912, authorized the creation of a Quartermaster Corps, which is to include the Quartermaster's Department at Large and certain other departments of the Army. This act provided that, as soon as practicable after the creation of a Quartermaster Corps not to exceed 4,000 (civilian) employees at monthly compensations ranging from \$30 to \$175 each, with the exception of certain employees of classes specified, should be replaced permanently by not to exceed an equal number of enlisted men. The force of civilians to be thus replaced was divided into two classes, the first to be replaced by enlisted men as soon as practicable, and the second to be replaced in the future at the discretion of the department, unless it should be deemed impracticable to fill the positions by enlistment, in which case civilians were to be employed. The department states that it does not intend to remove employees from the classified service for the purpose of assigning enlisted men to their duties. Vacancies, as they may occur, will be filled with enlisted men whenever possible. The commission has been requested to maintain registers of civilian eligibles for scientific and technical positions and certain subclerical and mechanical positions for which qualified enlisted men are not available.

REVISIONS OF FIELD REGULATIONS.

Revised regulations for the Lighthouse Service were adopted on January 28, 1913. The most important changes in this revision were the assumption by the commission of a more direct supervision over

the Lighthouse Service by the inclusion of a district secretary of the commission as a member of each board of examiners, the standardization of the examinations and the establishment of uniformity in ratings.

For many years examinations for field branches of the service employing large numbers of mechanics and tradesmen, while governed by civil service rules and regulations, were without the commission's direct supervision. The commission had no immediate representatives on the local boards of examiners, and there were wide differences in the practices of the boards. The commission now has a direct and close supervision of all local boards of examiners, with the exception of those for the Reclamation Service and the Indian Irrigation and Allotment Service. The district secretaries are now members of the boards and participate in the ratings which are made under a system of rules insuring uniformity, justice, and fairness.

EFFICIENCY RECORDS.

Section 4 of the act of August 23, 1912 (Public act No. 299),¹ requires the Civil Service Commission, subject to the approval of the President, to establish a system of efficiency ratings for the classified service in Washington, based upon records kept in each department, with such frequency as to make them, as nearly as possible, records of fact.

The act of March 4, 1913 (Public act No. 427),² provides that the commission shall investigate and report to the President, with recommendations, on the administrative needs of the service with respect to personnel.

¹ The Civil Service Commission shall, subject to the approval of the President, establish a system of efficiency ratings for the classified service in the several executive departments in the District of Columbia based upon records kept in each department and independent establishment with such frequency as to make them as nearly as possible records of fact. Such system shall provide a minimum rating of efficiency which must be attained by an employee before he may be promoted; it shall also provide a rating below which no employee may fall without being dismissed for inefficiency. All promotions, demotions, or dismissals shall be governed by provisions of the civil service rules. Copies of all records of efficiency shall be furnished by the departments and independent establishments to the Civil Service Commission for record in accordance with the provision of this section; *Provided*, That in the event of reductions being made in the force in any of the executive departments no honorably discharged soldier or sailor whose record in said department is rated good shall be discharged or dropped, or reduced in rank or salary.

Any person knowingly violating the provisions of this section shall be summarily removed from office, and may also upon conviction thereof be punished by a fine of not more than \$1,000 or by imprisonment for not more than one year.

² "Establishment and maintenance of system of efficiency ratings for initial year: For the establishment and maintenance of system of efficiency ratings for initial year, \$15,000, to be immediately available. The Civil Service Commission shall investigate and report to the President, with its recommendations, as to the administrative needs of the service relating to personnel in the several executive departments and independent establishments in the District of Columbia, and report to Congress details of expenditure and of progress of work hereunder at the beginning of each regular session; *Provided*, That no person shall be employed hereunder at a compensation in excess of \$4,000 per annum."

ORGANIZATION OF THE DIVISION OF EFFICIENCY AND PROGRESS OF ITS WORK.

Under these provisions of law the Division of Efficiency was created on March 25, 1913, by the appointment of a chief at \$4,000 a year. Since that date the commission has appointed a staff consisting of one expert investigator at \$3,000, one expert investigator at \$2,000, one clerk at \$1,600, one clerk at \$1,000, and one messenger at \$600.

RETIREMENT OF EMPLOYEES.

In its annual reports the commission has repeatedly discussed the subject of the retirement of employees. We believe that a plan for the retirement of superannuated employees is a necessary prerequisite to any satisfactory plan for increasing the efficiency of the service. We also believe that a contributory plan is the only just and practicable one.

NEEDS OF THE COMMISSION.

The number of persons examined during the past fiscal year has increased from 113,670 to 153,521, or a net increase of over 35 per cent. This increase in the number examined is due to the fact that there has been much wider competition in the examinations and to the further fact that many additional examinations were held to fill current vacancies in the 65,205 positions placed under the civil service during the year. For example, the commission is required to hold an average of 500 examinations a month to fill vacancies regularly occurring in fourth-class postmaster positions. The expense of holding these examinations is proving to be in excess of the original estimates. In addition, examinations are required to provide eligibles for certification to the Interstate Commerce Commission in its new work of physical valuation of the property of common carriers. For these positions about 12,000 applicants have already been examined. The installation of the parcel-post system increased the number of appointments in the Post Office and Railway Mail Services, thereby necessitating an increased number of examinations and inducing a larger number of persons to apply for these examinations. The "eight-in-ten hour" law brought about similar increases.

Last year Congress granted an increase of 15 positions in the commission's force, the primary reason being the estimated increase in work due to the classification of fourth-class postmaster positions. The increase in force amounted to a little over 7 per cent, while the number examined, which is an indication of the increase of work, was over 35 per cent. In the commission's estimates for the coming fiscal year an increase of 28 employees was asked for, or about 12 per cent of the present force.

The increase in the work due to the necessity of holding examinations to fill current vacancies in fourth-class postmaster positions should not be confused with the work involved in examining applicants for the 21,000 fourth-class postmaster positions whose incumbents did not receive a competitive status under President Wilson's order of May 7, 1913, and for beginning which work a special appropriation of \$39,000 was made.

An appropriation amounting to \$50,000 has been asked for the Efficiency Division for the coming year, the present appropriation being \$15,000 to cover a period of 15 months. This increase has been asked in order that the commission may undertake in several departments simultaneously the work which, on account of the small appropriation during the last fiscal year, has been limited to one department. From the results thus far accomplished through the recommendations of the Efficiency Division in cooperation with the departments, the commission is confident that the annual savings will amount to several times the appropriation asked.

The commission has asked an increase of \$10,000 in its appropriation for printing. The entire appropriation for printing in the last fiscal year was expended, and during May and June, 1913, all printing not absolutely necessary was suspended, with the result that printing to the amount of \$6,400 was postponed from that year until the beginning of the present fiscal year. Calculating on the basis of the expenditures for printing of last year, the absolutely needed expense for printing for the present fiscal year will result in a deficit of over \$15,000. With no increase in the amount of printing done, the shortage in funds this year would amount to \$6,400 carried over from last year and an equal amount due to this year's business, a total of \$12,800. Increased business this year will necessitate an expenditure of about \$3,000 in addition. It has been necessary to ask Congress for a deficiency appropriation for the current year, and the necessity of the increase of \$10,000 asked for next year is apparent.

The commission has also asked an increase of \$5,000 in its appropriation for traveling expenses. Heavy demands have been made upon this appropriation through the necessity of holding examinations to fill current vacancies in fourth-class postmaster positions. Owing to this drain upon the appropriation, much travel which would have been distinctly to the benefit of the service for inspection and investigation work has been necessarily omitted. Cases continue to multiply satisfactory adjustment of which can be brought about only by personal inquiry and investigation on the ground.

CHANGE OF COMMISSIONERS.

On June 9, 1913, the President accepted the resignations of Gen. John C. Black, Democrat, of Illinois, and Dr. William S. Washburn, Republican, of New York, as commissioners. They were succeeded by Charles M. Galloway, Democrat, of South Carolina, appointed June 19, 1913, and Hermon W. Craven, Republican, of the State of Washington, appointed July 3, 1913. The civil-service act requires that not more than two of the commissioners shall be adherents of the same party, and that they shall hold no other official place under the United States. In the reorganization of the commission, the President designated as president of the commission, John A. McIlhenny, who had served as commissioner since his appointment by President Roosevelt on November 30, 1906.

We have the honor to be, very respectfully,

JOHN A. McILHENNY,

CHAS. M. GALLOWAY,

H. W. CRAVEN,

Commissioners.

The PRESIDENT,

The White House.

INDEX.

	Page.
Abandoned military reservations.....	1137
Academic training of Indians.....	1230
Accidents, investigation of railroad.....	1528
Address of the President.....	5
Adjutant General, War Department, report of.....	233
Admeasurements of vessels.....	1438
Advance Base School, Marine Corps.....	1016
Aerial mail service.....	751
Aeronautics, military (<i>see also</i> Army).....	172, 524
Aeroplane mail service.....	807
Aeroplanes, radio sets for, Army.....	523
Agents, internal-revenue.....	131
Agricultural cooperation.....	1266
Agricultural credits.....	1267
Agricultural education.....	1295
Agricultural experiment stations.....	1294
Agricultural work of the Indians.....	1218
Agriculture, Department of:	
Accounting system, improving.....	1251
Activities, coordination of.....	1277
Animal diseases, animal husbandry, and dairying.....	1292
Appropriations.....	1249-1250
Birds, Federal law protecting migratory.....	1287
Business operations.....	1249
Cooperation, agricultural.....	1266
Cotton and corn standards.....	1290
Crop outlook, the.....	1295
Crop production, constructive research and demonstration work in.....	1289
Crops in the United States.....	1295
Crops of the world.....	1297
Dairying.....	1292, 1293
Demonstration work.....	1289
Department's work, popularizing the.....	1275
Efficiency ratings.....	1253
Expenditures for various lines of work, comparison of.....	1250
Established work, review of.....	1280
Extension.....	1278
Farm-management investigations.....	1290
Fields of work, new.....	1262
Food and drugs act, changes affecting enforcement of the.....	1257
Foreign plant introduction and exploration.....	1290
Hatch and Adams acts, proper administration of.....	1279
Highways, improved.....	1283
Indian affairs, cooperation in.....	1219
Insect control, new methods of.....	1293
Insecticide act, enforcement of the.....	1286
Irrigation and drainage.....	1295
Legal work.....	1285
Legal work, cooperation in.....	1257
Meat situation, the foreign.....	1293
National forests, administration of the.....	1280
Organization of, changes in.....	1253, 1260
Personnel.....	1251
Plant-quarantine act, Federal.....	1288
Post roads, improvement of.....	1284
Publications, new classification of.....	1275

	Page.
Agriculture, Department of—Continued.	
Recommendations of.....	1301
Research.....	1278
Road building, Federal aid in.....	1283
Rural credits.....	1267
Rural organization problems.....	1272
Secretary of Agriculture, report of the.....	1249
Seed distribution.....	1292
Soil-survey work, cooperation in.....	1256
State agricultural institutions, relations with.....	1276
States, cooperation with the.....	1284
Statistics, Bureau of, reorganization of.....	1255
Summary of the more important features.....	1298
Tick eradication.....	1292
Weather Bureau. (<i>See</i> Weather Bureau.)	
Agriculture, Indian.....	1220
Air craft, use of, in war by the Navy.....	887
Alaska.....	1089
Address of President in regard to.....	10
Army in, health of.....	389
Coal.....	1028
Coal in Bering River field.....	1209
Coal lands.....	1143
Coal, test of, by the Navy.....	971
Fisheries and fur resources.....	1396
Homestead law.....	1141
Homestead rights; soldiers' additional.....	1142
Interior, report of Secretary of, concerning.....	1023
Lighthouses.....	1409
Mineral or medicinal springs.....	1142
Railroad Commission.....	1193
Railroads.....	1027
Reindeer service.....	1188
Revenue-Cutter Service depot in.....	150
School service.....	1185
Signal Corps, operations of.....	514
Soldiers' additional homestead rights.....	1142
Springs, mineral or medicinal.....	1142
Star service in.....	806
Surveys in.....	1140
Transportation case.....	673
Washington-Alaska military cable and telegraph system, transfer of, to Post Office Department.....	176
Alcoholism:	
Army.....	372
Philippines.....	383
Aliens, Navy, naturalization of.....	927
Allotments to Indians.....	1245
American troops, recruiting.....	420
Anchorage.....	1439
Animal diseases.....	1292
Animals, public, at Army posts.....	275
Anthracite Coal case.....	673
Antiquities, preservation of American.....	1107
Antitrust act:	
Criminal prosecutions under.....	681
Antitrust cases:	
Alaska Transportation case.....	673
Anthracite Coal case.....	673
Cases instituted since July 1, 1912.....	677
Cotton Corner case.....	673
Decided by Supreme Court (<i>see also</i> Justice, Department of).....	671
Investigations under.....	709
Naval Stores case.....	674
Shoe Machinery case.....	673
Status of cases instituted prior to July 1, 1912.....	674

	Page.
Antitrust law:	
Address of President in regard to.....	8
Enforcement of.....	670
Investigations under.....	709
Apache prisoners of war, release of.....	1241
Apportionment:	
Civil service.....	1550
Law of.....	1337
Appropriations, estimates of.....	39
Architect, Office of the Supervising.....	136
Arid lands.....	1034
Arkansas, sunk and lake lands in.....	1134
Armor, guns, and powder should be made by the Navy Department.....	881
Armor, Navy.....	940
Armor-plate factory, importance of.....	882
Armories, equipment of.....	452
Arms, small, for Army.....	490
Army:	
Actual strength of.....	235
Admission rates.....	354
Admission rates, comparison with foreign armies.....	351
Aeronautics—	
Aerial navigation, material for.....	528
Aeroplane engines, pending purchase of.....	530
Aeroplane service, summary of.....	531
Aviation service, equipment and personnel.....	529
Aviation transportation (recommended).....	538
Aviators, reward to.....	538
Aviation organization (recommended).....	536
Field-artillery fire, observation and control of.....	524
Gun-fire experiments.....	525
Machines.....	525
Mackay trophy.....	525
Maneuvers.....	525
Radio operators, rating of.....	539
Radiotelegraphy as applied to aviation.....	529
Alaska, health of, in.....	389
Alcoholism.....	372
Armory, Springfield.....	504
Arms of service, influence of.....	350
Arms, small.....	490
Arsenal—	
Augusta.....	510
Benicia.....	511
Frankford.....	505
New York.....	510
Picatinny.....	511
Rock Island.....	501
San Antonio.....	511
Watertown.....	509
Watervliet.....	508
Artillery—	
Coast.....	214
Field.....	211
Mountain.....	493
Supply of mobile.....	499
Authorized and actual strength, comparison of.....	235
Authorized strength of the.....	233
Barracks and quarters in the Philippines.....	388
Campaign badges.....	269
Camps at Texas City and Galveston, sanitation of.....	375
Camps for college students.....	167
Camps, sanitary inspection of.....	377
Cannon, ammunition for.....	496
Cavalry.....	211
Chief of Engineers, report of.....	429
China, troops in.....	390

Army—Continued.

	Page.
Coast Artillery—	
Efficiency of the.....	542
Equipment of.....	452
Fortifications.....	543
Organization and administration.....	543
Practice.....	499
Report of chief of.....	540
Strength of the.....	540
Target practice and instruction.....	545
Consolidation of supply departments of.....	174
Construction and repairs, Quartermaster Corps.....	310
Continental (United States), exclusive of Alaska.....	354
Cooks for regimental detachment.....	279
Cost of maintenance of the organizations of the several branches of the line of the.....	486
Court-martial trials, delays in general.....	389
Deaths.....	357
Deaths from all causes.....	343
Dental and oral diseases.....	419
Dental Corps.....	404
Deserters, restoration of citizenship to and reenlistment of.....	250
Desertion.....	245, 285
Detail system in the.....	172
Diphtheria.....	372
Discharges for disability.....	341, 354
Discharges from, by purchase.....	252
Discharges of enlisted men ordered by the War Department.....	251
Discharges on surgeon's certificate of disability.....	251
Diseases, special, prevalence of.....	360
Engineer depots.....	446
Engineer officers, civilian assistants to.....	450
Engineer post and school, Washington Barracks.....	451
Engineer troops.....	431
Engineers, Corps of—	
Engineers, Board of.....	431
Equipment of officers schools, military posts.....	449
Equipment of troops.....	448
Officers of.....	429
Philippines, contingencies in.....	450
Enlisted men.....	156
Health of.....	336
Retired.....	243
Equipment.....	273
Fevers—	
Malarial.....	367
Typhoid.....	360
Undetermined.....	371
Field Artillery practice.....	499
Field gun matériel.....	498
Field officers, test exercises for.....	336
Field training.....	273
Fort Bayard, N. Mex., hospital.....	395
Fortifications—	
Insular possessions.....	442
Isthmian Canal.....	445
Seacoast.....	173
United States.....	432
Funds—	
Company.....	278
Public.....	278
Hospitals, general.....	393
Letterman General Hospital, San Francisco, Cal.....	394
Geographical distribution of troops.....	236
Geographical divisions and departments of.....	174
Grenades.....	493
Guns and mortars.....	492

Army—Continued.

	Page.
Harbor boat service, Quartermaster Corps.....	322
Hawaii, health of, in.....	389
Health and sanitation of the.....	159
Health of.....	333
Age and length of service, influence of, on.....	374
American troops in the Philippines. (<i>See</i> Philippines.)	
Constantly noneffective rate.....	336, 354
Officers.....	334
Race, influence of, on.....	374
Station, influence of, on.....	373
Hospital Corps.....	405
Hospitals, construction and repair of.....	418
Hot Springs, Ark., General Hospital.....	397
Howitzer matériel.....	498
Identification system, personal.....	267
Infantry.....	215
Influence of station on troops.....	343
Inspections.....	271
Inspections, tactical.....	273
Inspector General, report of.....	270
Instruction of troops.....	274
Invaliding to the United States from the Philippines.....	384
Judge Advocate General, report of.....	280
Legislation.....	208
Length of service.....	353
Manila, P. I., division hospital.....	399
Measles.....	372
Medal, Philippine service.....	270
Medals of honor.....	269
Medical Corps.....	401
Promotions during fiscal year in.....	402
Medical Department.....	401
Medical Museum.....	419
Medical officers and Hospital Corps, care of Mexican wounded by.....	412
Medical officers, special work of.....	410
Medical Reserve Corps.....	402
Medical School.....	410
Meningitis, cerebrospinal.....	373
Mental alienation.....	372
Mexican border, troops enforcing neutrality laws on the.....	264
Military aeronautics.....	172, 524
Military clothing used in the Philippines.....	389
Military operations.....	158
Military prison administration.....	157
Military structures, Philippines.....	445
Militia—	
Organized.....	218
United States property issued to.....	225
National calamities, uses of, in.....	163, 231
Nonmilitary duty, excessive paper work, poor administrative methods...	217
Nurse Corps.....	404
Officers.....	155
Additional.....	239
Elimination and selection of.....	171
Examined for promotion.....	241
In actual service, commissioned.....	239
Health of.....	334
Mounts.....	276
Of the, detailed at civil educational institutions.....	244
On detached service.....	240
Post.....	277
Retired.....	241
Shortage of.....	227
Who had Civil War service, commissioned.....	242
With foreign armies.....	227

Army—Continued.

	Page.
Ordnance Department of.....	175
Cash rewards for employees in.....	484
Comparison of fiscal statement with that of the preceding year.....	480
Fiscal affairs.....	478
Funds on hand at beginning and close of fiscal year.....	478
Operation of liability act.....	485
Payment in.....	480
Scientific management in.....	480
Stores, transfer and sales.....	479
Surplus material in.....	484
Ordnance depot, Manila.....	512
Ordnance equipment of mobile army for war.....	489
Ordnance, report of Chief of.....	478
Outside continental limits of the United States.....	237
Pack outfits.....	498
Panama Canal Zone, troops in.....	391
Paper work.....	279
Philippine interisland service.....	323
Philippine Islands, American troops in.....	379
Philippine Scouts (<i>see also</i> Philippines).....	216, 236
Porto Rico, troops in.....	391
Post.....	173
Post officers.....	277
Powder factory.....	500
Powder, smokeless.....	494
Prisoners, general.....	264
Public animals at posts.....	275
Quartermaster Corps, report of Chief of.....	290
Race, influence of.....	350
Ration, the.....	274
Recruiting for the.....	254, 274, 420
Remount service.....	328
Remounts.....	276
Requisitions.....	278
Reserve.....	169, 261
Reserves.....	210
Retired enlisted men.....	243
Retired officers on active duty.....	240
Rifles, automatic machine.....	497
Sanitary troops of the Organized Militia.....	417
Sanitation, second division.....	375
Sanitation, United States.....	374, 375
Seacoast guns and carriages, improvements in.....	500
Second division, mobilization of.....	263
Second lieutenants appointed.....	238
Secretary of War's report on.....	154
Service cap and campaign hat.....	374
Service schools.....	227
Cooks and bakers trained at.....	279
Shoe, the military, Munson.....	416
Shoes.....	375
Sick report, admissions to.....	337
Signal Corps—	
Alaska, Philippines, and the United States, operations of.....	514
Coast observations and coast patrol.....	532
Field and telegraph companies of.....	518
Radio sets for aeroplanes.....	523
Radiotelegraphy.....	522
Recommendations to increase the efficiency of the.....	535
Report of Chief of.....	512
Telegraph companies of the.....	519
United States operations.....	516
Signal Office, War Department.....	520
Signal troops of the Organized Militia.....	520
Signaling.....	277
Small-arms firing.....	261

Army—Continued.	Page.
Smallpox.....	372
Staff departments, business methods of.....	278
Strength and losses of.....	244
Submarine mine defenses.....	544
Supplies, Quartermaster Corps.....	298
Surgeon General, report of.....	329
Surgical operations.....	352
Tactical organization of, and its distribution.....	211
Telegraph operators, additional pay for.....	538
The line of the.....	271
Transportation, wheel.....	276
Transports.....	279
Troops, field service of.....	232
Tuberculosis.....	369
Uniform of the.....	275
Uniforms, pride in its.....	161
Venereal diseases.....	362
Veterinary corps, proposed.....	409
Veterans' camp at Gettysburg, Pa., 1913.....	378
Volunteer commissions, persons qualified to hold.....	243
Walter Reed General Hospital.....	394
Army and Navy, international conference to discuss reduction of cost of.....	879
Arsenals. (<i>See</i> Army.)	
Artificial limbs and apparatus.....	418
Artillery (<i>see also</i> Army):	
Mountain.....	498
Supply of mobile.....	499
Assay offices, gold bullion deposits at.....	71
Ash-pan act.....	690, 1526
Attorney General, report of (<i>see also</i> Justice, Department of).....	669
Augusta Arsenal.....	510
Aviation (<i>see also</i> Aeronautics; Army):	
Marine Corps.....	1017
Navy.....	931
Organization of Army (recommended).....	536
Balkans, observation of Army Medical Department in.....	415
Bankruptcy act, proposed amendment to.....	713
Banking in recent years, growth of.....	103
Banking power of the United States.....	104
Banks (<i>see also</i> National banks):	
Classification of loans and discounts in all.....	105
Condition of, in the United States.....	99
Individual deposits in all.....	108
Investments in bonds and other security in all.....	105
Loan and trust companies.....	117
Money in.....	107
Mutual savings.....	114
Private.....	116
Savings.....	113
Savings deposits in all.....	110
State.....	113
State savings and private.....	111
Stock savings.....	115
Benecia Arsenal.....	511
Beriberi, Philippines.....	384
Bird reserves.....	1109, 1144
Birds, Federal law protecting migratory.....	1287
Blind, Maryland School for.....	1117
Boilers, inspection of locomotive.....	1532
Bonds:	
Manila & Philippine Railroad Co.....	554
Postal savings, and investments therein.....	51
Registered, payment of interest on.....	45
Security for national banks.....	49
Security for postal savings funds.....	50
Withdrawal to secure circulation.....	51

	Page.
Boston, intracoastal waterways from the Rio Grande to.....	458
Boundaries:	
International.....	1418
State.....	1132
Bounty-land warrants.....	1170
Bubonic plague in Porto Rico.....	414, 561
Bucket-shop cases.....	710
Buildings, sites for post offices.....	765
Cadets, Revenue-Cutter Service, appointment of.....	151
Calamities, national, uses of the Army in.....	163
California and Oregon land-grant suits.....	702
California Débris Commission.....	456
California district mining sheets.....	1146
Campaign badges, Marine Corps.....	1010
Camps for college students, Army.....	167
Canada, newspapers mailed to.....	844
Canal. (<i>See</i> Panama Canal.)	
Canal act, Panama.....	1535
Canal Co. of Nicaragua, Maritime.....	1122
Canals, rules and regulations governing the navigation of.....	462
Cannon, ammunition for.....	496
Capitol Buildings and Grounds, Superintendent of the.....	1118
Carey Act.....	1139
Cavalry.....	211
Cemeteries, national.....	295
Census, Bureau of (<i>see also</i> Commerce, Department of).....	1321
Certificates, silver.....	61
Children's Bureau.....	1323, 1479, 1487
China, American troops in.....	390
Chinese indemnity cases, Court of Claims.....	695
Chief of Staff, Army:	
Recommendations of.....	232
Report of.....	203
Cholera, Philippines.....	384
Circulation:	
Money in.....	57
Population and.....	57
Withdrawal of bonds to secure.....	51
Civil Engineers, United States Navy, Corps of.....	918
Civil service:	
Porto Rico.....	593
Superannuation and retirement.....	200, 1339, 1493
Civil Service Commission:	
Appointments, temporary.....	1551
Apportionment.....	1550
Classified service, growth of.....	1546
Classified service, legislation affecting the.....	1557
Commissioners, change of.....	1561
Division of Efficiency and progress of its work, organization of the.....	1559
Efficiency records.....	1558
Employees, retirement of.....	1559
Examinations—	
Appointments and.....	1548
Exceptions from.....	1547
Scope and character.....	1549
Executive civil service, extent of.....	1546
Field regulations, revisions of.....	1557
Navy yards, classification of the.....	1556
Needs of the.....	1559
Political activity and assessments.....	1555
Political assessments.....	1556
Postmasters, assistant, examination of.....	1554
Postmasters, fourth-class.....	1553
Removals.....	1552
Report of.....	1545
Civil War service, Army officers with.....	242

	Page.
Civil War veterans, camps at Gettysburg.....	378
Claims against Indians, traders'.....	1244
Classified service, growth of.....	1546
Clothing, inquiry into cost of production of.....	1313
Coal:	
Alaska.....	1028
Bering River field, Alaska, investigations of.....	1209
Navy, supply of.....	886
Storage plants, Navy.....	912
Test of Alaskan, by the Navy.....	971
Subaqueous, test of, by the Navy.....	972
Western.....	1030
Coal and other fuels, Navy.....	977
Coal lands, Alaska.....	1143
Coast and Geodetic Survey:	
Assistance rendered in saving life or property by.....	1421
Geodetic work.....	1414
Hydrographic and topographic work.....	1414
Magnetic work.....	1414
Outlying territory of.....	1417
Publications of.....	1419
Recommendations of.....	1421
Special duty of.....	1420
Special surveys.....	1417
Tides and currents.....	1417
Coast Artillery (<i>see also</i> Army):	
Practice.....	499
Report of Chief of.....	540
Coast Guard.....	20
Coast observations and patrol of Signal Corps.....	532
Coins and currency, counterfeits detected.....	73
College students, Army camps for.....	167
Combinations, inquiry into industrial.....	1310
Commerce and Labor, Department of.....	1444
Commerce Court, work of.....	697
Commerce Department:	
Appointment Division.....	1328
Apportionment, law of.....	1337
Appointments.....	1331, 1332
Appropriations.....	1317
Appropriations, balances of.....	1325
Appropriations, necessity for increased.....	1306
Building, proposed new.....	1305
Bureaus now in.....	1318
Census, Bureau of the.....	1321, 1374
Appointments, temporary.....	1332
New legislation, added work imposed by.....	1375
Official Register of the United States.....	1379
Office force.....	1381
Temporary appointments in.....	1332
Thirteenth Census work, progress of.....	1374
Work for fiscal year 1914.....	1376
Children's Bureau.....	1323
Clothing, inquiry into cost of production of.....	1313
Coast and Geodetic Survey (<i>see also</i> Coast and Geodetic Survey).....	1414
Commercial agents.....	1357
Commercial attachés.....	1355
Conclusion of report of Secretary of.....	1440
Corporations, Bureau of.....	1319, 1360
Future work.....	1416
Investigations, status of pending.....	1360
Scope of past work.....	1360
Department—	
Present organization of the.....	1303
Removal of.....	1316
Disbursements.....	1318

Commerce Department—Continued.

	Page.
Disbursing office.....	1317
Economic laws governing fixing of retail prices, study of.....	1311
Efficiency records.....	1336
Equipment of the department, insufficient.....	1313
Expenditures, personnel and equipment.....	1305
Field investigations.....	1349
Fisheries, Bureau of.....	1321, 1387
Commercial fisheries.....	1393
Fish-cultural work.....	1387
Fisheries and fur resources of Alaska.....	1396
Fur-seal service.....	1397
Investigations and surveys.....	1391
Miscellaneous activities and relations of.....	1399
Foreign and domestic commerce.....	1319
Foreign and Domestic Commerce, Bureau of.....	1348
Creation of.....	1335
Development and expansion.....	1350
Division of work of.....	1352
Personnel and duties of various organization units of.....	1352
Publicity work.....	1348
Reorganization of.....	1307
Foreign Tariffs, Division of.....	1349
Housing accommodations.....	1304
Immigration and Naturalization, Bureau of.....	1323
Industrial combinations, inquiry into efficiency of.....	1310
Labor—	
Bureau of.....	1323
Bureaus now in Department of.....	1323
Transfers to Department of.....	1314
Legislation for new work, suggested.....	1355
Lighthouse Service.....	1339
Lighthouses, Bureau of.....	1321, 1400
Administration method and economies of.....	1401
Alaska.....	1409
Appropriations for.....	1406
Cooperation of.....	1404
Engineering and construction.....	1410
Improvement of apparatus.....	1411
Legislation affecting.....	1405
Navigation, aids to.....	1407
Organization of.....	1400
Saving of life and property by employees of.....	1413
Vessels in service.....	1413
Manufactures, Bureau of.....	1319
Navigation, Bureau of.....	1320, 1432
Anchorage.....	1439
Deck loads.....	1440
Load-line conference.....	1436
Radio communication.....	1435
Safety at sea.....	1434
Vessels, admeasurement of.....	1438
Personnel, changes in the.....	1330
Personnel, statistics relating to.....	1328
Personnel transferred to Department of Labor.....	1330
Policy, outline of present and future.....	1306
Presidential positions.....	1333
Printed supplies, distribution of.....	1342
Promotions.....	1337
Public-service corporations, gathering of underlying facts concerning.....	1312
Publication work.....	1343
Publications—	
Distribution of.....	1344
Division of.....	1340
Sale of.....	1346
Transfers to Department of Labor.....	1345
Volume and cost of printing.....	1340

Commerce Department—Continued.

	Page.
Recapitulation.....	1323
Retail prices, study of economic laws governing fixing of.....	1311
Secretary of Commerce, report of.....	1303
Separations and miscellaneous changes.....	1331, 1332
Solicitor of.....	716, 1347
Standards, Bureau of.....	1319, 1364
Materials, testing and research.....	1370
Municipalities and States, work for.....	1366
Research and testing.....	1369
Standards, establishment of.....	1368
Weights and measures of commerce and trade.....	1367
Statistics, Bureau of.....	1319
Statistics, Division of.....	1349
Steamboat-Inspection Service (<i>see also</i> Steamboat-Inspection Service). 1320,	1423
Stock and shipping sections, consolidation of.....	1317
Superannuation and retirement.....	1339
Commercial agents.....	1357
Commercial attachés, Department of Commerce.....	1355
Commissary stores, Navy.....	981
Commissioned officers afloat, rations for.....	981
Commissioner of General Land Office, report of the.....	1128
Commissioner of Pensions, report of.....	1158
Commissioners, shipping.....	1433
Commodities clause, interstate-commerce laws, cases under.....	689
Comptroller of the Currency, report of.....	77
Confederate and Union Armies, official records of.....	267-8
Congressional cases, Court of Claims.....	695
Contingent fund, Treasury Department.....	23
Cooks and bakers trained at Army service schools.....	279
Corporations:	
Bureau of (<i>see also</i> Commerce, Department of).....	1319
Gathering of underlying facts concerning public service.....	1312
Reports of Bureau of.....	1363
Cotton and corn standards.....	1290
Cotton Corner case.....	673
Cotton statistics, census.....	1379
Counterfeit coins and currency.....	73
Court-martial trials, delays in general.....	289
Court of Claims:	
Appeals to the Supreme Court from.....	697
Chinese indemnity cases.....	695
Congressional cases.....	695
Departmental cases.....	695
French spoliations.....	696
Indian depredation cases.....	696
Jurisdiction cases, general.....	694
Work of.....	694
Court officials, examination of the offices of.....	711
Courts-martial, Navy.....	896-899
Cranes, floating.....	912
Credits, rural.....	1267
Criminal and civil suits, pensions.....	1169
Criminal identification records.....	719
Criminal prosecutions under the antitrust act.....	681
Crop-moving deposits.....	14
Crops. (<i>See</i> Agriculture Department.)	
Crown gall of plants.....	1289
Currency (<i>see also</i> Paper currency):	
Comptroller of, report of.....	77
Emergency.....	13
Legislation.....	16
Legislation, address of President in regard to.....	7
Paper, condition of.....	58
Shipments of, from Washington.....	72
Customs cases.....	699
Customs collectors, convention of.....	19

	Page.
Customs service.....	18
Dairying.....	1292-1293
Dangerous articles, transportation of.....	1428
Dates, artificial ripening of.....	1289
Dayton, Ohio, financial aid to.....	13
Dead Letters, Division of, Post Office Department.....	871
Deaf, Columbia Institution for the.....	1116
Deaths in Army.....	343, 357
Deaths in Philippines, American troops.....	381
Deaths, Philippine Scouts.....	386
Debt, bonded, of the United States, and national-bank holdings.....	92
Deck courts, Navy.....	899
Demonstration work, Department of Agriculture.....	1289
Dengue, Philippines.....	384
Dental Corps:	
Army.....	404
Navy.....	1004
Dental and oral diseases, Army.....	419
Dental examiners, Porto Rico.....	594
Denver conference on Indian affairs.....	1224
Departmental cases, Court of Claims.....	695
Depositories of the United States.....	52
Deposits:	
Crop-moving.....	14
Government interest on.....	16
Individual, in all banks in United States.....	108
Depositors and deposits, savings, in national banks.....	88
Derelicts, removal of.....	148
Desertions:	
Army.....	245, 285
Navy.....	889
Diarrhea and enteritis, Philippines.....	384
Diseases among American troops in Philippines.....	382
Diseases in Army.....	360
Diseases of special interest, Navy.....	984
Desert entries, extension of.....	1135
Diphtheria, Army.....	372
Distribution of money in the United States.....	108
District courts:	
Proposed changes relating to offices of clerks of.....	713
Business transacted in.....	700
District of Columbia, transactions of Treasurer with.....	75
Dominican customs receivership.....	563
Drainage, Minnesota State.....	1136
Dry dock, Pearl Harbor.....	886
Dry docks.....	909
Dysentery, Philippines.....	384
Education:	
Agricultural.....	1295
Alaska school service.....	1185
Commissioner of, report of.....	1181
Division of Higher.....	1181
Kindergarten Education, Division of.....	1184
Negro Education, Division of.....	1184
Opposition of Pueblos to.....	1240
Philippines.....	556
Porto Rico.....	562
Recommendations of the Commissioner of.....	1189
Rural Education, Division of.....	1182
School Administration, Division of.....	1181
School Hygiene and Sanitation, Division of.....	1182
Statistical Division.....	1185
Education Board, General.....	1120
Education, Bureau of, abstract of report of.....	1062
Educational institutions, Army officers detailed at.....	244
Efficiency ratings, Department of Agriculture.....	1253

	Page.
Efficiency records:	
Civil service.....	1558
Department of Commerce.....	1336
Eight-hour law:	
Navy.....	942
Post Office Department, operation of.....	787
Electrical work, Navy.....	970
Ellis Island immigration station.....	1473
Eleemosynary institutions.....	1110
Emergency currency announcement.....	13
Employers' liability act, address of President in regard to.....	11
Engineers, Board of.....	431
Engineer equipment of troops.....	448
Engineer troops.....	431
Engineers:	
Corps of. (<i>See Army.</i>)	
Navy, Corps of Civil.....	918
Report of Chief of.....	429
Engraving and Printing, Bureau of.....	135
Enlisted men:	
Army.....	156
Discharges by purchase.....	252
Discharges of.....	251
Discharges on surgeon's certificate of disability.....	251
Health of.....	336
Length of service.....	353
Navy.....	926
Retired.....	243
Enlistments in Navy, large increases of.....	894
Enteritis and diarrhea, Philippines.....	384
Envelopes:	
Stamped.....	855
Window.....	855
Estimates of appropriations.....	39
Examination of Navy officers.....	921
Examinations, Naval Academy entrance.....	922
Excise tax on corporations.....	126
Exercises for field officers.....	336
Experiment stations, agricultural.....	1294
Farm credits, address of President in regard to.....	7
Farm-management investigation.....	1290
Farm, woman on the.....	1273
Fairs and associations, Indian agricultural.....	1221
Federal aid in road building.....	872, 1283
Fevers:	
Army, undetermined.....	371
Army, malarial.....	367
Field Artillery practice.....	499
Field-gun matériel.....	498
Finances, annual report on.....	13
Finances, Treasury Department.....	24
Financial statements, War Department.....	198
First Assistant Postmaster General, report of (<i>see also</i> Post Office Department).....	780
Fisheries, Bureau of (<i>see also</i> Commerce, Department of).....	1321
Fisheries, commercial.....	1393
Five Civilized Tribes.....	1241
Fleet, machinery of the.....	968
Flood districts, Navy relief in.....	919
Flood relief work of Army Medical Corps.....	411, 416
Florida Seminoles.....	1239
Food and drugs act, changes affecting enforcement of.....	1257
Food supply in the Philippines.....	388
Foreign affairs, address of President on.....	5
Foreign and domestic commerce (<i>see also</i> Commerce, Department of).....	1307
Foreign exchange, money orders used for.....	840
Foreign Mails, Division of.....	808
Forestry, Indian.....	1225

	Page.
Forest reserves, homestead entries in	1138
Forests, national	1138, 1280
Fort Bayard, N. Mex., General Hospital	395
Fort Leavenworth	446
Fortifications:	
Coast Artillery	543
Insular possessions	442
Isthmian Canal	445
Panama Canal	651
Seacoast	173
United States	432
Fourth Assistant Postmaster General, report of	866
Fourth-class postmasters:	
Appointment of	782
Civil-service examination of	1553
Fourth section docket, Interstate Commerce Commission	1504
Frankford Arsenal	505
Franking privilege	755
Fraud orders, Post Office Department	760
Freedmen's Hospital	1113
French spoliation cases, Court of Claims	696
Fuel, coal and other, Navy	977
Fuel oil, Navy	884, 972
Fuel, oil and gasoline storage plants, Navy	911
Fur seal, protection of the	149
Fur-seal service	1397
Galveston and Texas City, sanitation of Army camps at	375
General Land Office, abstract of report of	1042
Geodetic work	1414
Geological Survey:	
Abstract of report of	1068
Alaska Railroad Commission	1193
Decrease in appropriation for	1104
Director of, report of	1191
Land classification, report of	1104
Special features	1191
Work of, growth of	1192
Work of, scope of	1191
Work of the year	1104
Gettysburg, Civil War veterans' encampment at	231, 378
Gold:	
Bullion deposits at mints and assay offices	71
Certificates	60
Certificates, use of, for exchange on New York	70
Ratio of, to total stock of money	56
Standard funds of the Philippines	554
Treasury, in the	48
Government deposits, interest on	16
Grazing on tribal lands	1222
Grazing policy	1282
Grenades for Army	493
Guantanamo, Cuba	910
Guns and mortars	492
Gun factory, naval	945
Guns, field and machine, and small arms	940
Guns, Navy	937
Habana, removal of wreck of battleship Maine from harbor of	476
Harbor boat service, Quartermaster Corps	322
Hatch and Adams Acts, proper administration of	1279
Hawaii	1096
Address of President in regard to	9
Army, health of, in	389
Honolulu, Army depot in	447
Health and sanitation of the Army	159
Health conditions in metal mines	1200
Health of the Army	333

	Page.
Health of the Indians.....	1228
Health, relation of insects to.....	1272
Health Service, Public.....	138
Heating and lighting plant, Treasury Department.....	23
Hetch Hetchy Valley.....	1104
Highways, improved.....	1283
Historical ships, Navy.....	920
Homestead entries in forest reserves.....	1138
Hospital Corps:	
Army.....	405
Navy.....	1005
Hospital for the Insane, Government.....	1110
Hospitals:	
Army.....	393
Construction and repair of.....	418
Freedmen's.....	1113
Fort Bayard, N. Mex.....	395
Hot Springs, Ark., Army and Navy.....	397
Letterman General.....	394
Manila, division, Army.....	399
Naval, construction of.....	1006
Navy.....	910
Walter Reed General.....	394
Hot Springs, Ark., Army and Navy Hospital.....	397
Hours-of-service act.....	690, 1526
Howard University.....	1114
Howitzer matériel.....	498
Hydrographic Office:	
Navy.....	935
Weather Bureau, cooperation with.....	1254
Hygiene and sanitation school.....	1182
Ice patrol.....	21, 149
Identification records, criminal.....	719
Identification system, Army.....	267
Illinois, mine investigations in.....	1210
Immigration and naturalization, Bureau of.....	1323
Immigration, Bureau of. (See Labor, Department of.)	
Immigration stations.....	1472
Income tax.....	17
Indemnity cases, Chinese.....	695
Indian Affairs:	
Abstract of Report of Commissioner of.....	1047
Academic training of Indians.....	1230
Apache prisoners of war, release of.....	1241
Agricultural fairs and associations.....	1221
Agricultural work.....	1218
Agriculture Department, cooperation of.....	1219
Agriculture, reimbursable funds for promoting.....	1220
Commissioner of, report of.....	1213
Conclusion of report on.....	1247
Denver conference.....	1224
Employees as Indian teachers, efficiency of.....	1232
Farming and grazing leases.....	1221
Finance of.....	1235
Five Civilized Tribes.....	1241
Forestry.....	1225
General statement of Commissioner.....	1213
Health.....	1228
Irrigation.....	1227
Land allotments.....	1136
Leasing on the Uintah and Ouray Reservation.....	1221
Liquor among employees, use of.....	1224
Liquor service, difficulties of the.....	1223
Liquor traffic, suppression of the.....	1222
Marriage and divorce among.....	1233
Menominee Mills.....	1226

Indian Affairs—Continued.	Page.
Murderers of Supt. Stanley	1233
Open lands, grazing on	1222
Osage Reservation, oil and gas mining leases on	1237
Peyote, use of	1224
Physical training	1231
Public schools	1231
Pueblos, opposition to education	1240
Purchase of supplies	1234
Road building	1222
Schools	1229
Schools in eastern Oklahoma, aid of common	1232
Seminoles of Florida	1239
Stock raising	1219
Tribal lands, grazing on	1222
Trust plan for Pueblo	1239
Visual instruction	1231
Vocational training	1230
Wind River Reservation, leasing on the	1221
Wines for sacramental purposes	1224
Indian allotments	1245
Suits to cancel unlawful conveyances of	706
Indian art	1244
Indian depredation cases, Court of Claims	696
Indian inheritance cases	1238
Indian lands:	
Mining on	1236
Sale of	1236
Indian moneys:	
Depositaries for	1236
Individual	1235
Indian reservations, lieu selections for lands in	1137
Indian Service, conference of employees of	1233
Indian tribes, enrollment with	1235
Indians:	
Employment of	1234
Legislation affecting	1242
Traders' claims against	1244
Industrial combinations, inquiry into	1310
Infantry, Army	215
Inheritance cases, Indian	1238
Injured employees, indemnification of, Post Office Department	792
Insane, Government Hospital for the	1110
Insect control, new methods of	1293
Insecticide act, enforcement of	1286
Insects, relation of health to	1272
Inspection of locomotive boilers	1532
Inspection, post-office	807
Inspection service, Post Office Department	759
Inspector General, Army, report of	270
Inspectors of Steamboat-Inspection Service, traveling	1426
Insular Affairs, Report of Chief of Bureau of	547
Insular possessions, fortifications	442
Insurance of fourth-class mail	865
Insured mail	862
Interest on Government deposits	16
Internal-Revenue Service:	
Accounts and statistics	118
Agents	131
Commissioner of, report of	118
Corporations, special excise tax on	126
Receipts in large taxpaying States and collection districts	119
Recommendations	132
Stamps	131
Tax, special excise, on corporations	126
Taxation, objects of	121
Taxes, cost of collecting	121

	Page.
International mail-transit statistics.....	813
International parcel post.....	811
Interstate-commerce laws, cases under (<i>see also</i> Justice, Department of).....	681
Intracoastal waterways from Boston, Mass., to the Rio Grande.....	458
Invaliding to the United States from the Philippines.....	384
Investigation, Bureau of, Department of Justice.....	708
Irrigation:	
Porto Rico.....	562
Porto Rico, commission on.....	596
Irrigation and drainage, Department of Agriculture.....	1295
Interior Department:	
Administrative board, proposed.....	1025
Alaska, as to.....	1023
Alaska, roadway along shores of navigable waters in.....	1142
Alaskan coal.....	1028
Alaskan railroads.....	1027
Bird reservations.....	1109, 1144
Bureaus and other administrative units of the department, abstracts of reports of.....	1041
Capitol Buildings and Grounds, Superintendent of.....	1118
Coal, western.....	1030
Columbia Institution for the Deaf.....	1116
Cooperation with States.....	1038
Education Board, General.....	1120
Education, Bureau of, abstract of report of.....	1062
Education, report of the commissioner of.....	1181
Eleemosynary institutions.....	1110
Freedmen's Hospital.....	1113
Fuel investigations.....	1211
General Land Office—	
Abstract of report of.....	1042
Cash receipts and expenditures of.....	1128
Field service, the.....	1129
Report of the Commissioner of.....	1128
State boundaries.....	1132
Surveying.....	1130
Geological Survey (<i>see also</i> Geological Survey):	
Abstract of report of.....	1068
Report of Director of United States.....	1191
Government Hospital for the Insane.....	1110
Howard University.....	1114
Indian Affairs (<i>see also</i> Indian Affairs)—	
Report of Commissioner of.....	1213
Office of, abstract of report of.....	1047
Indian allotments.....	1136
Land policy.....	1021
Lands, arid.....	1034
Lands, timber.....	1034
Maritime Canal Co. of Nicaragua.....	1122
Maryland School for the Blind.....	1117
Mines, Bureau of. (<i>See</i> Mines, Bureau of.)	
Mines, Bureau of, abstract of report of.....	1085
National forests.....	1138
National monuments.....	1144
National monuments and preservation of American antiquities.....	1107
National parks and reservations.....	1099
Patent Office (<i>see also</i> Patents)—	
Abstract of report of.....	1061
Report of the Commissioner of.....	1177
Pension Office, Abstract of report of (<i>see also</i> Pensions).....	1057
Pensions, report of the Commissioner of.....	1158
Petroleum, phosphate, and potash.....	1031
Power sites.....	1039
Public domain, statistics relating to the disposition of the.....	1147
Public lands, resurveys.....	1131
Reclamation Service, abstract of report of.....	1071

Interior Department—Continued.	Page.
Royalties for use of public lands.....	1037
Territories.....	1089
Yosemite National Park, Hetch Hetchy Valley.....	1104
International boundaries.....	1418
International conference to discuss reduction of cost of Navy and Army.....	879
Irrigation, Indian.....	1227
Interstate Commerce Commission:	
Accidents, investigation of.....	1528
Ash-pan act.....	1526
Docket—	
Formal.....	1504
Fourth section.....	1504
Informal.....	1503
Special.....	1503
Fourth section, the.....	1516
Hours-of-service act.....	1526
Inquiry, division of.....	1505
Investigation and suspension docket.....	1504
Investigation of railroad accidents.....	1528
Locomotive boilers, inspection of.....	1532
Panama Canal act.....	1535
Parcel post.....	1539
Railway valuation.....	1536
Rate increases in official classification territory, proposed.....	1525
Rate schedules and application of rates.....	1505
Recommendations.....	1541
Report of.....	1503
Safety appliances.....	1525
Tariff schedules, suspension of proposed changes in.....	1521
Transcontinental commodity rates, westbound.....	1524
Western classification.....	1522
Isthmian Canal. (<i>See</i> Panama Canal.)	
Isthmian Canal Commission, report of (<i>see also</i> Panama Canal).....	611
Judge Advocate General:	
Army, report of.....	280
Navy, report of.....	896
Justice, administration of, in the Navy.....	900
Justice, Department of:	
Antitrust cases decided by Supreme Court.....	671
Antitrust law, enforcement of the.....	670
Appropriations and estimates.....	720
Attorney General, recommendations of the.....	669
Attorney General, report of the.....	669
Bankruptcy act, proposed amendment to.....	713
Bucket shop cases.....	710
Cases, important, investigated.....	711
Commerce Court, the.....	697
Court of Claims (<i>see also</i> Court of Claims).....	694
Court officials, examination of the offices of the.....	711
Criminal identification records.....	719
Customs cases.....	699
District courts—	
Business transacted in.....	700
Proposed changes relating to offices of clerks of.....	713
Indian allotments, suits to cancel unlawful conveyances of.....	706
Interstate-commerce laws, cases under the.....	681
Interstate-commerce laws—	
Cases under ash-pan act.....	690
Cases under commodities clause, the.....	689
Cases under hours-of-service act.....	690
Cases under rebates and unlawful discriminations.....	681
Cases under safety-appliance acts.....	690
Cases under 28-hour law.....	690
Investigation, Bureau of.....	708
Land-grant suits, Oregon and California.....	702

Justice, Department of—Continued.

	Page.
National banking laws, violations of the.....	709
Neutrality statutes, violations of.....	710
Oil lands reserved by the President, litigation concerning.....	704
Opinions.....	701
Pardons.....	715
Penitentiary, Leavenworth, Kans.....	719
Penitentiary, McNeil Island, Wash.....	718
Peonage cases.....	710
Prisoners, United States.....	716
Public Lands Division.....	701
Revenue, frauds on the.....	690
Solicitor of the Department of Commerce.....	716
Solicitor of the Treasury.....	715
Southern Pacific Railroad Co., suits against, concerning oil lands.....	705
Sunk-land cases.....	705
Supply Division.....	720
Supreme Court, the.....	691
Supreme Court, abstracts of decisions at October (1912) term.....	721
Training School for Boys, National.....	719
Training School for Girls, National.....	720
White-slave traffic act, violations of the.....	714
Key West, Fla., Navy fuel-oil tank at.....	914
Kindergarten education.....	1184
Labor, Bureau of.....	1323
Labor, Department of.....	1445
Appointments.....	1490
Appointments, Division of.....	1447
Appropriations for.....	1482
Appropriations transferred to, balances of.....	1486
Assistant Secretary.....	1446
Bureaus transferred from the Department of Commerce.....	1323
Bureaus, work of the.....	1457
Chief Clerk.....	1446, 1482
Children's Bureau.....	1479, 1496
Operations of.....	1480
Origin and functions of.....	1479
Statistics of.....	1487
Commerce and Labor, Department of.....	1444
Conclusion of, report of.....	1500
Contingent expenses.....	1494
Department quarters.....	1483
Departmental organization, plan for.....	1497
Disbursing clerk.....	1447
Disbursing office.....	1485
Early proposals.....	1443
Ellis Island station—	
Dangerous explosives near.....	1473
Railway bureau at.....	1475
Estimates.....	1493
Expenditures.....	1482
Immigration, Bureau of.....	1463, 1486, 1494
Operations of, fiscal year 1913.....	1464
Origin of.....	1463
Immigration station—	
Boston, new.....	1475
Charleston, Galveston, and New Orleans, new.....	1474
Interior places.....	1476
Philadelphia.....	1475
Immigration stations.....	1472
Information, Division of.....	1477
Operations for fiscal year 1913.....	1477
Interests, fairness to all.....	1442
Labor, Bureau of.....	1444
Labor legislation.....	1497
Labor Statistics, Bureau of.....	1457, 1495
Mediation expenses.....	1493

Labor, Department of—Continued.	Page.
Mediation in labor disputes.....	1447
Mediation, miscellaneous cases for.....	1456
Mediations.....	1448
Mediations rejected.....	1452
Naturalization, Bureau of.....	1478, 1495
Operations for fiscal year 1913.....	1478
Statistics of.....	1487
Net appropriations.....	1483
Operations during fiscal year 1913.....	1459
Organization and operations heretofore.....	1457
Organization of.....	1445
Organization of the department.....	1445
Organized and unorganized labor.....	1442
Origin of department.....	1443
Personnel.....	1190
Personnel transferred from the Department of Commerce.....	1330
Printing and binding.....	1489
Promotions.....	1492
Publications and Supplies, Division of.....	1447, 1488
Publications, distribution of.....	1489
Purpose of the department.....	1441
Receipts.....	1483
Recommendations.....	1497
Report of Secretary of.....	1441
Salaries.....	1494
Secretary of.....	1446
Secretary of Labor, report of.....	1441
Secretary, office of the.....	1482
Separations and miscellaneous changes.....	1492
Solicitor.....	1446
Solicitor, report of the.....	1457
Statistics of the Bureau of Labor.....	1486
Superannuation and retirement.....	1493
Supplies, purchase of.....	1490
Transfers from the Department of Commerce.....	1314
Wage earners, welfare of.....	1441
Work of the department.....	1447
Labor disputes, mediation in.....	1447
Labor, organized and unorganized.....	1442
Labor, Secretary of.....	1446
Labor Statistics, Bureau of.....	1486
Lake lands and sunk lands in Arkansas.....	1134
Lake surveys:	
Project of.....	465
Status of.....	471
Lamps, investigations of safety.....	1199
Land entered and patented, area of.....	1128
Land-grant suits, Oregon and California.....	702
Land Office, General.....	1042
Lands, sale of Indian (<i>see also</i> Public lands).....	1236
Leases, farming and grazing, Indian.....	1221
Leavenworth (Kans.) Penitentiary.....	719
Legislation:	
Army.....	208
Currency.....	16
Indians.....	1242
Labor.....	1497
Lighthouse Service.....	1405
Post Office Department.....	771
Treasurer of the United States.....	75
Letter postage, 1-cent.....	848
Liability act, operation of, in Ordnance Department.....	485
Life-saving by Lighthouse Service.....	1413
Life-Saving Service (<i>see also</i> Coast guard).....	145
Lighthouse Service (<i>see also</i> Commerce, Department of; Lighthouses, Bureau of).....	1339
Lighthouses, Bureau of (<i>see also</i> Commerce, Department of).....	1321

	Page.
Liquor traffic, suppression of Indian	1222
Loan and trust companies	111
Loans. (See National banks.)	
Lockport, Ill., to mouth of the Illinois River, waterway from	458
Locomotive boilers, inspection of	1532
Lottery paraphernalia, Post Office Department	762
McNeil Island (Wash.) Penitentiary	718
Machinery, Navy	969
Magazines, naval	947
Magnetic work	1414
Mails, use of, for fraudulent purposes	759
Maine, removal of wreck of U. S. S., from the harbor of Habana	476
Manila division hospital, Army	399
Manila ordnance depot	512
Manila Railroad Co.:	553
Malarial fevers:	
Army	367
Philippines	382
Manufactures, Bureau of	1319
Maps, War Department	450
Marine Corps:	
Advance base school of	1016
Appointments, retirements, resignations, deaths, etc., in the	1010
Aviation in the	1017
Campaign badges, good conduct medals, etc., given in the	1010
Depot of supplies for	1018
Distribution of force	1010
Enlisted force	1010
Expeditionary forces of the	1015
Field clerks	1009
Marine officers' school	1017
Matériel	1017
Personnel of the	1008
Physical training in the	1013
Post exchanges, indebtedness to	1011
Principal offenses	898
Public works	911
Officers at service schools, instruction of	1017
Officers school	1017
Recruit depots of the	1012
Recruiting divisions of the	1011
Report of commandant of	1008
Rifle range	946
Savings deposits	1011
Service afloat of the	1015
Service schools, instruction of officers at	1017
Target practice in the	1013
Transports	1017
Trials	897
Uniform regulations of the	1017
Stations, public works at	1018
Marine hospitals and relief, Public Health Service	143
Marketing	1263
Marriages and divorces among the Indians	1233
Materials, testing and research	1370
Measles, Army	372
Meat and meat-food products, interstate mail shipments of	847
Meat situation, foreign	1293
Medals of honor:	
Army	269
Navy	920
Mediation in labor disputes	1448
Mediations, labor	1447
Medical Corps:	
Army	401
Navy	1004

	Page.
Medical Department, Army (<i>see also</i> Surgeon General).....	401
Medical examiners, Porto Rico.....	594
Medical Museum, Army.....	419
Medical nomenclature, international.....	333
Medical officers, Army, special work of.....	410
Medical Reserve Corps:	
Army.....	402
Navy.....	1004
Medical School, Army.....	410
Medicine and Surgery, Navy, Bureau of:	
Report of.....	983
Public works.....	910
Meningitis, cerebrospinal, Army.....	373
Menominee Indian Mills.....	1226
Mental alienation:	
Army.....	372
Philippines.....	384
Merchant marine, tonnage of the.....	1432
Mexican border, troops enforcing neutrality laws on.....	264
Mexican wounded, care of, by Army medical officers and Hospital Corps.....	412
Mexico:	
Address of President in regard to.....	6
Mails for.....	811
Midshipmen, preliminary examination of candidates for.....	923
Migratory birds, Federal law protecting.....	1287
Military Academy, United States:.....	170, 226, 253
Military education.....	228
Military operations.....	158
Military reservations, abandoned.....	1137
Militia:	
Coast Patrol.....	533
Equipment of.....	452
Naval.....	888, 932
Organized.....	176, 218
Property issued to.....	225
Sanitary troops of.....	417
Signal troops of.....	520
Mills, Menominee Indian.....	1226
Mineral industries, investigation relating to health conditions in the.....	1211
Mineral-technology investigations.....	1211
Mineral-waste investigations, some savings from.....	1207
Mine defenses, submarine.....	544
Mines, Bureau of:	
Abstract of report of.....	1085
Address of President in regard to.....	11
Apparatus, investigations of mine rescue and first-aid.....	1199
Beneficial results of work of.....	1201
Coal mining, investigations of the use of electricity in.....	1198
Cooperative work in Illinois.....	1210
Electricity used in coal mining, investigations of the use of.....	1198
Explosives used in mining, investigation of.....	1198
Fuel investigations.....	1211
Mine-accident investigations.....	1208
Mine accidents and mineral waste, what the Nation loses from.....	1208
Mine accidents, general reduction of.....	1204
Mine explosives—	
Improvements in.....	1203
Reduction of.....	1204
Mine rescue and first-aid apparatus, investigations of.....	1199
Mine rescue and first-aid work, growth of.....	1206
Mine rescue cars and stations, work of.....	1210
Mine rescue stations, increasing number of privately owned.....	1202
Mineral waste, investigations of.....	1199
Mines, lessened danger from use of electricity in.....	1203
Oil and natural gas, waste of.....	1199
Organic act establishing the bureau, the old.....	1197

Mines, Bureau of—Continued.

	Page.
Organic act, the new.....	1196
Purpose of.....	1195
Radium and other rare metals, investigations of.....	1200
Metal mines, safety and health conditions at.....	1200
Mining, investigation of explosives used in.....	1198
Report of director of.....	1195
Safety and health conditions at metal mines.....	1200
Safety lamps, investigations of.....	1199
Smelter fumes.....	1199
Work of, since its establishment.....	1198
Mines, Navy.....	941
Mining leases on Osage reservations, oil and gas.....	1237
Mining-experiment stations, international conference of.....	1210
Mining on Indian lands.....	1236
Mining sheets, California district.....	1146
Minnesota State drainage.....	1136
Mint Service, Treasury Department.....	133
Mints:	
Gold-bullion deposits at.....	71
Operations of the.....	133
Mississippi River Commission.....	460
Mississippi River, experimental towboats for.....	461
Mobilization of second division of the Army.....	263
Monetary stock, Treasury Department.....	55
Money:	
Circulation at end of each fiscal year.....	57
Distribution of, in the United States.....	108
In circulation.....	57
Paper currency, condition of United States.....	58
Ratio of gold to stock of.....	56
Money orders. (<i>See</i> Post Office Department.)	
Motor vessels.....	1426
Mountain artillery.....	498
Municipal statistics, Census.....	1380-1381
Municipalities in Porto Rico.....	598
National-bank notes, redemption of.....	72
National banking laws, violations of.....	709
National banks. (<i>See also</i> Banks; Treasury Department):	
Bond investments and loans, productivity of.....	91
Bonded debt of the United States, holdings of.....	92
Bonds and other similar investments by.....	90
Bonds held as security for.....	49
Classification of, by capital stock.....	89
Condition of.....	77, 99
Depositaries of the United States.....	52
Deposits and withdrawal of bonds.....	92
Earnings and dividends of.....	93
Loans and discounts of.....	80
Loans, bonds, cash, and deposits, changes in.....	86
Loans maturing in 90 days or less.....	82
Organization of.....	96
Percentage of principal items of assets and liabilities of.....	91
Public deposits in.....	52
Relation of capital to deposits, etc., of.....	90
Reserves of.....	84
Savings depositors and deposits in.....	88
Shareholders.....	94
National calamities, uses of the Army in.....	163
National cemeteries.....	295
National disasters, work of Army in.....	231
National forests.....	1138
Administration of.....	1280
National monuments.....	1107, 1144
National parks and reservations.....	1099
National Training School for Boys.....	719

	Page.
National Training School for Girls.....	720
Naturalization, Bureau of.....	1478
Naval Academy:	
Entrance examinations.....	922
Postgraduate department at the.....	920
Naval auxiliary service.....	929
Naval Gun Factory.....	945
Naval homes, pensions of inmates of.....	923
Naval hospitals, construction of.....	1006
Naval magazines.....	947
Naval Militia.....	932
Naval Militia and Naval Reserve.....	888
Naval Observatory.....	934
Naval proving ground.....	944
Naval Reserve, National.....	933
Naval Stores case.....	674
Naval torpedo station.....	946
Navigation, anchorage, and other laws, enforcement of.....	149
Navigation, Bureau of.....	1320
Navigation laws, enforcement of the.....	1437
Navigation receipts.....	1433
Navigation, report of Chief of Bureau of.....	919
Navy:	
Administration of justice in the.....	900
Additions to the, since June 30, 1912.....	956
Advancement and promotion, means for.....	892
Air craft in war, use of.....	887
Alaskan coal, test of.....	971
Aliens, naturalization of.....	927
Appointment, competitive.....	893
Armor.....	940
Armor, guns, and powder should be made by the department.....	881
Armor-plate factory, importance of.....	882
Ashore.....	888
Aviation.....	931
Building program.....	880
Civil Engineers, Corps of.....	918
Coal—	
Subaqueous tests of.....	972
Supply of.....	886
Coal and other fuel.....	977
Coal-storage plants.....	912
Commissary stores.....	981
Courts-martial—	
General.....	896
Summary.....	899
Deck courts.....	899
Dental Corps.....	1004
Desertions and punishments.....	889
Diseases of special interest.....	984
Dry docks.....	909
Additional.....	917
Pearl Harbor.....	886
Eight-hour law, the.....	942
Electrical work.....	970
Enlisted men—	
Checkage of pay of.....	927
Graded retirement of.....	926
Transportation of.....	928
Trials of.....	897
Enlisted personnel—	
Demands upon the.....	923
Training of.....	924
Enlistments in.....	894
Examining boards of candidates for officers.....	900
Examining boards of the.....	899

Navy—Continued.

	Page.
Field guns, machine guns, and small arms.....	940
Fleet. (<i>See</i> Fleet.).....	
Floating cranes.....	912
Fuel oil.....	884, 972
Fuel, oil, and gasoline storage plants.....	911
Guantanamo, Cuba.....	910
Gun mounts.....	938
Guns.....	937
Health and sanitation.....	895
Historical ships.....	920
Hospital Corps.....	1005
List of vessels of the United States.....	956
Machinery, design of.....	969
Machinery, new, construction of.....	969
Machinery of naval vessels constructed or under construction July 1, 1913, condition of.....	973
Machinery of the fleet.....	968
Material, inspection of.....	972
Meat inspection for.....	977
Medals of honor.....	920
Medical Corps, personnel of.....	1004
Medical Reserve Corps.....	1004
Merit the only test.....	893
Midshipmen, candidates for, preliminary examination of.....	923
Mines.....	941
Nurse Corps.....	1005
Officers—	
Examination of.....	921
Index of record of.....	921
List, the.....	921
Trials of.....	897
Paymaster's clerks.....	922
Pearl Harbor.....	909
Pensions of inmates of naval homes.....	923
Postgraduate department at the Naval Academy.....	920
Powder, smokeless.....	939
Principal offenses, schedules of.....	898
Printer, rating of.....	926
Projectiles.....	939
Proving ground.....	944
Radio service, the.....	887
Radio stations.....	911
Radiotelegraphy.....	929, 970
Ration.....	980
Rations for commissioned officers afloat.....	981
Recruiting service, the.....	927
Relief in storm district.....	919
Religious leaders needed.....	890
Reserve, National Naval.....	933
Retired pay.....	894
Retiring boards of the.....	899
Sanitary conditions and measures afloat.....	990
Sanitary conditions and measures ashore.....	995
Sanitary conditions and measures in general.....	999
Schools.....	925
Sea service requisite.....	889
Student officers.....	950
Torpedoes.....	941
Trials held at each naval station.....	897
Vessels authorized, new.....	959
Yards and docks, maintenance and repairs and preservation of.....	916
Navy and army, international conference to discuss reduction of cost of.....	879
Navy Department (<i>see also</i> Navy):	
Condemned materials.....	982
Construction and Repair, report of Chief of Bureau of.....	951
Equipment, Bureau of.....	981

Navy Department—Continued.		Page.
Expenditures, economies in		889
Gun Factory, Naval		945
Hydrographic Office		935
Judge Advocate General, report of		896
Major General, Commandant United States Marine Corps, report of		1008
Marine Corps (<i>see also</i> Marine Corps), report of		1008
Marine rifle range		946
Medicine and Surgery, Bureau of—		
Public works		910
Report of		983
Naval Academy. (<i>See</i> Naval Academy.)		
Navigation, report of Chief of Bureau of		919
Observatory, Naval		934
Ordnance, Bureau of—		
Experimental work		942
Inspection duty		950
Report of Chief of		937
Paymaster General of the Navy, report of		975
Powder factories		945
Scrap metals and other condemned material		982
Secretary of, report of		875
Specifications		976
Steam Engineering, Bureau of—		
Experiment station		974
Report of Chief of		968
Storekeeping system afloat, general		979
Storekeeping system ashore, general		978
Storm district, Navy relief in		919
Supplies and Accounts, Bureau of—		
Purchases and contracts		976
Report of Chief of		975
Surgeon General—		
Recommendations of		1006
Report of		983
Yards and Docks, Bureau of—		
Operations of		912
Report of Chief of		908
Navy yards:		
Civil-service classification of		1556
Power plants at		909
Shipbuilding work at		951
Negro education		1184
Neutrality statutes, violations of		710
New England vessel fisheries		1394
Newspapers:		
Semiannual statement of ownership, circulation, etc		843
Sunday editions of, mailed to Canada		844
New York Arsenal		510
New York, transfers of funds for deposit made in		69
Niagara Falls, preservation of		472
Nicaragua, Maritime Canal Co. of		1122
Northern and northwestern lakes, survey of		462
Nurse Corps:		
Army		404
Navy		1005
Observatory, Naval		934
Ocean mail service		751
Officers, Navy student		950
Officers' schools, Army, equipment of		449
Official Register of the United States		1391
Oil and natural gas, waste of		1199
Oil and gas wells through workable coal beds		1209
Oil lands, litigation concerning		704
Oil, Navy supply of fuel		884
Oklahoma, aid of common schools in eastern		1232
One-cent letter postage		848

	Page.
Opinions, Department of Justice.....	701
Ordnance, Army, report of Chief of.....	478
Ordnance Department of the Army (<i>see also</i> Army).....	175
Ordnance, Navy, report of Chief of Bureau of.....	937
Oregon and California land-grant suits.....	702
Osage Reservation, oil and gas mining leases on.....	1237
Oyster industry.....	1393
Pack outfits, Army.....	498
Panama Canal:	
Accounts and disbursements, examination of.....	658
Army in, Zone.....	391
Atlantic division, work of.....	621
Cost of keeping the.....	651
Central division, work of.....	629
Civil administration and law, departments of.....	661
Commission, report of.....	611
Construction and engineering.....	612
Disbursements of.....	661
Expenditures on.....	22
Fifth division, work of.....	633
Fortifications.....	445, 651
General remarks concerning.....	667
Interstate Commerce Commission.....	1535
Law, department of.....	664
Quartermaster's department of the.....	655
Railroad, construction of the new.....	650
Receipts and disbursements.....	42
Recreation of employees in.....	667
Sanitation, department of.....	666
Second division, work of.....	642
Secretary of War's report on.....	186
Sixth division, work of.....	639
Subsistence, department of.....	658
Paper currency (<i>see also</i> Treasury Department):	
Average life of.....	64
Condition of the United States.....	58
Cost of.....	63
Denominations, changes in.....	61
Held in reserve, supply of United States.....	66
Outstanding, by denominations.....	63
Outstanding, pieces of United States.....	62
Philippines.....	554
Prepared for issue and amount issued.....	65
Ratio of small denominations to all.....	63
Redemptions of.....	66
Parcel post:	
Additional compensation for mail transportation on account of.....	748
Insurance of.....	865
International.....	811
Interstate Commerce Commission.....	1539
Motor vehicles, Government-owned.....	786
Philippines.....	557
Porto Rico.....	558
Report of Postmaster General on.....	737
Stamps.....	852
Standardization of methods.....	783
Third-class matter, admission of.....	743
Parcel Post Service.....	783
Pardons, Department of Justice.....	715
Parks and reservations, national.....	1099
Patent Office, abstract of report of.....	1061
Patents, report of the Commissioner of.....	1177
Patents, work of the year concerning.....	1177
Paymaster General, Navy, report of.....	975
Paymaster's clerks, Navy.....	922
Pearl Harbor.....	909

	Page.
Pearl Harbor Dry Dock.....	886
Pellagra, studies of Army Medical Department in.....	416
Penitentiary, United States:	
Leavenworth, Kans.....	719
McNeil Island, Wash.....	718
Pension Office, abstract of report of.....	1057
Pensions:	
Act of February 6, 1907.....	1166
Act of April 19, 1908.....	1166
Act of May 11, 1912.....	1167
Bounty land warrants.....	1170
Disbursing office and payment of, without separate vouchers.....	1161
General statement in regard to.....	1150
Special acts.....	1168
Suits, criminal and civil.....	1169
Ten years' summary.....	1168
Peonage cases.....	710
Periodicals, transportation of, in fast-freight trains.....	746
Petroleum, phosphate, and potash.....	1031
Peyote, Indian use of.....	1224
Pharmacy board, Porto Rico.....	594
Philippine Commission:	
As a chamber of the legislature.....	565
Exclusive legislative jurisdiction of.....	565
Report of.....	565
Philippine Scouts, Army.....	216
Philippines:	
Address of President in regard to.....	9
American troops in.....	379
Antimalarial measures in the.....	388
Appropriation acts governing the.....	553
Army medal for service in.....	270
Barracks and quarters in the.....	388
Bonded indebtedness of the.....	553
Commercial and business status in the.....	570
Commercial statistics concerning.....	550
Deaths in, American troops.....	381
Depositaries in the United States for, funds of.....	555
Disposal of wastes in the.....	388
Education in the.....	556
Engineer department.....	450
Finances of the.....	570
Food supply in the.....	388
Gold-standard fund of the.....	554
Health of American troops in.....	379
Admission rates.....	380
Alcoholism and its results in.....	383
Beriberi in the.....	384
Cholera in the.....	384
Constantly noneffective rates.....	380
Dengue in the.....	384
Diarrhea and enteritis in the.....	384
Discharges on certificates of disability.....	381
Dysentery in the.....	384
Influence of age (disease only).....	385
Influence of season in the.....	385
Influence of station in the.....	385
Invaliding to United States from the.....	384
Length of service (disease only).....	385
Malarial fevers.....	382
Mental alienation in the.....	384
Prevalence of special diseases among.....	382
Smallpox.....	383
Tuberculosis in.....	384
Typhoid fever in.....	382
Undetermined fevers in.....	383
Venereal diseases in.....	383

Philippines—Continued.	Page.
Hospital, Manila, Army	399
Insular receipts and disbursements of the	555
Interisland service, Army	323
Legislation affecting the	549
Legislation needed	549
Manila & Philippine Railroad Co., bonds of	554
Manila, Army depot in	447
Manila Railroad Co.	553
Military clothing used in the	389
Military structures on	445
Ordnance depot, Manila	512
Paper currency of the	554
Parcels post in the	557
Proximity of native towns	387
Recommendations in regard to the	571
Sanitation in the	387
Scouts	236
Admissions	386
Constantly noneffective, rates of	385
Deaths	386
Discharge for disability	386
Secretary of War's report on	178
Silver, coinage of	554
Stamped envelopes and postal cards, exchange of	856
Trade in, condition of	567
Physical training, Indians	1231
Physical training, Marine Corps	1013
Picatinny Arsenal	511
Plant quarantine act	1288
Political activity and assessments of civil-service employees	1555
Population and circulation	57
Porto Rico:	
Address of President in regard to	9
Agriculture, board of commissioners of	595
Army in	391
Board of health in	592
Bubonic plague in	561
Civil service in	593
Commerce commission in	597
Commerce in	558
Commission on uniform legislation in	595
Dental examiners, board of	594
Education in	562, 606
External commerce in	576
Fair board in	596
Health and sanitation in	589
Insular government, finance in	599
Irrigation commission in	596
Irrigation system in	562
Judiciary of	608
Legislation affecting	558
Legislation in	588
Medical examiners, board of	594
Municipalities in	598
Parcels post in	558
Pardons and paroles given in	588
Personnel, changes in	557
Pharmacy, board of	594
Plague in	414
Police in	593
Public works in	606
Public works, buildings and lands in	605
Receipts and expenditures of	560
Report of the governor of	571
Sanitary conditions in	560

Porto Rico—Continued.	Page.
Secretary of War's report on.....	184
Visitors, board of.....	595
Postal cards, new.....	855
Postal savings (<i>see also</i> Post Office Department):	
Bonds held as security for.....	50
Division of.....	829
Securities, legal acceptability of.....	762
Postal Savings System.....	751
Postal Service (<i>see also</i> Post Office Department):	
Expenditures.....	26, 36, 38
Finances.....	733
Postmaster General, report of (<i>see also</i> Post Office Department).....	733
Postmasters. (<i>See</i> Post Office Department.)	
Post Office Department (<i>see also</i> Postal Service):	
Administration changes.....	781
Aerial mail service.....	751
Aeroplane mail service.....	807
Buildings, sites for.....	765
Central and South American mails.....	811
Classification, Division of.....	841
Clerks and carriers, efficiency ratings of.....	788
Collect-on-delivery service.....	866
Dead Letters, Division of.....	871
Eight-hour law, operation of the.....	787
Electric and cable car service.....	802
Envelopes, stamped.....	855
Expenditures, appropriations, and estimates.....	796
Experimental village delivery service.....	789
Extensions.....	737
Finance, Division of.....	824
Financial summary.....	767
First Assistant Postmaster General—	
Personnel of bureau.....	794
Report of the.....	780
Foreign Mails, Division of.....	808
Fourth Assistant Postmaster General, report of.....	866
Fourth class (domestic parcel post mail), insurance of.....	865
Franking privilege.....	755
Fraud orders.....	760
Fraudulent devices.....	761
Fraudulent purposes, use of the mails for.....	759
Freight on mail bags, postal cards, etc.....	801
General policy of.....	735
Guaranty fund in lieu of bonds for officers and employees of.....	764
Injured employees, indemnification of.....	792
Inspection.....	807
Inspection service.....	759
Insured mail.....	862
International transit statistics.....	813
Joint committee on postage on second-class mail matter and compensation for the transportation of mail.....	801
Legislation, recommendations for.....	771
Lottery paraphernalia.....	762
Mail Messenger Service.....	805
Mail service, general statement of.....	795
Mail transportation, increase in expenditures for.....	796
Mails for Mexico.....	811
Meat and meat-food products, interstate mail shipments of.....	847
Miscellaneous Transportation, Division of.....	802
Money-order service.....	754
Money-order system, extension of international.....	755
Money orders—	
Foreign exchange.....	840
International business.....	839
International business, proposed extension of.....	839

Post Office Department—Continued.

	Page.
Money Orders, Division of.....	836
Newspapers mailed to Canada, Sunday editions of.....	844
Ocean mail service.....	751
One-cent letter postage.....	848
Parcel post.....	737, 783, 841
Additional compensation for mail transportation on account of.....	748
Admission of third-class matter to.....	743
Increase of weight limit and decrease of rates.....	842
International.....	811
Insurance of.....	865
Motor vehicles, Government-owned.....	786
Rate sheet.....	842
Stamps.....	852
Standardization of methods.....	783
Payment of postage, evasion of the.....	847
Periodicals, transportation of, in fast-freight trains.....	746
Personnel, interchangeable.....	745
Philippine Islands, exchange of stamped envelopes and postal cards with the.....	856
Postage, receipts from.....	841
Postage stamps, precanceling.....	744
Postal cards—	
Ink for No. 5.....	856
New.....	855
New postal savings.....	856
Postal employees, bonds of.....	792
Postal finances.....	733
Postal savings—	
Bonds.....	835
Central office at Washington.....	829
Certificates of deposit.....	835
Changes in procedure.....	830
Division of.....	829
Extension of the system.....	836
New system, growth of.....	831
Official postal card, new.....	856
Post offices, depository.....	833
Savings cards and stamps.....	835
Securities, determining the legal acceptability of.....	762
Postal Savings System.....	751
Postal Service—	
Supplies for the.....	763
Postmasters, civil-service examination of.....	1554
Postmasters, fourth-class, civil-service examination of.....	1553
Postal telegraphs and telephones.....	742
Postmaster General, report of.....	733
Postmasters—	
Appointment of.....	765, 781
Claims of, for reimbursement for losses sustained.....	762
Fourth-class, appointment of.....	782
Presidential, appointment of.....	781
Presidential, salaries of.....	79
Reimbursement of, for postal-savings losses, etc.....	763
Post Office Service, The.....	780
Post offices, fourth-class.....	869
Post roads, national aid in the construction and maintenance of.....	757
Precanceled postage stamps, use of.....	842
Publications, semiannual statements of ownership, circulation, etc., of....	843
Railroad transportation, mail.....	797
Railroads, compensation to, for carrying the mails.....	747
Railway Adjustments, Division of.....	797
Railway mail pay—	
Increase in annual rate of expenditure.....	800
Joint committee on.....	901

Post Office Department—Continued.

Page.

Railway Mail Service—

Division of.....	814
Improvements in.....	820
Improvement of conditions in.....	745
Supervision of.....	821

Railway postal clerks—

Appointment of.....	822
Reclassification of salaries.....	821
Relief measures granted to.....	822

Receipts and disbursements on account of.....	42
---	----

Reduced postage rate for certain letters.....	812
---	-----

Registered and insured mail at 60 offices.....	862
--	-----

Registered mail—

Money and money values sent in the.....	863
Short-paid international.....	864

Registered Mail, Division of.....	858
-----------------------------------	-----

Registration, free.....	862
-------------------------	-----

Registrations, paid—insured mail.....	862
---------------------------------------	-----

Registry mail lost, indemnity for.....	865
--	-----

Registry Service, special features of the.....	863
--	-----

Registry stamps, discontinuance of.....	854, 864
---	----------

Registry system, growth of the.....	859
-------------------------------------	-----

Road improvement, Federal aid in.....	872
---------------------------------------	-----

Rural carriers.....	867
---------------------	-----

Salaries, scale of.....	868
-------------------------	-----

Rural delivery.....	868
---------------------	-----

Rural mail service.....	756
-------------------------	-----

Rural Mails, Division of.....	866
-------------------------------	-----

Rural routes, establishment and readjustment.....	869
---	-----

Sea-post service, improvements in the.....	813
--	-----

Second Assistant Postmaster General, report of.....	795
---	-----

Second-class mail matter.....	753, 843
-------------------------------	----------

Second-class mail matter—

Applications received for admission of publications to.....	846
---	-----

Separation of, by publishers.....	819
-----------------------------------	-----

Stamp books.....	851
------------------	-----

Improvement in.....	852
---------------------	-----

Stamp supplies, stocks of.....	856
--------------------------------	-----

Stamped paper, redemption of.....	857
-----------------------------------	-----

Stamps—

Coiled.....	851
-------------	-----

Commemorative stamps.....	852
---------------------------	-----

Discontinuance of registry.....	854
---------------------------------	-----

Division of.....	848
------------------	-----

Improvements in.....	857
----------------------	-----

New denominations of.....	854
---------------------------	-----

Parcel post.....	852
------------------	-----

Stamps and Redemption, consolidation of Divisions of.....	856
---	-----

Stamps, Division of, requisitions filed in the.....	851
---	-----

Star Service.....	869
-------------------	-----

Star service in Alaska.....	806
-----------------------------	-----

Stations and branch, post offices.....	791
--	-----

Steamboat or other power boat service.....	804
--	-----

Sunday service, compensatory time for.....	788
--	-----

Supplies, Division of.....	870
----------------------------	-----

Terminal railway post offices.....	750
------------------------------------	-----

Third and fourth class matter, mailings of, without stamps affixed.....	847
---	-----

Third Assistant Postmaster General, report of.....	823
--	-----

Third-class matter, admission of, to parcel post.....	743
---	-----

Topography, Division of.....	871
------------------------------	-----

Trans-Atlantic mails.....	810
---------------------------	-----

Trans-Pacific mails.....	810
--------------------------	-----

Undeliverable mail matter, treatment of.....	759
--	-----

Universal Postal Congress.....	813
--------------------------------	-----

Village delivery service.....	758
-------------------------------	-----

Washington-Alaska military cable and telegraph system, transfer of.....	176
---	-----

Window envelopes.....	855
-----------------------	-----

Post roads:	Page.
Improvement of.....	1284
National aid for.....	757
Potato diseases.....	1289
Powder factory, Army.....	500
Powder factories, Navy.....	945
Powder, manufacture of, by the Navy Department.....	881
Powder, smokeless.....	494, 939
Power sites.....	1039
President, address of.....	5
Presidential positions in the Department of Commerce.....	1333
Presidential postmasters, appointment of.....	781
Presidential primaries, address of President in regard to.....	9
Printer, Navy, rating of.....	926
Prison administration, military.....	157
Prison, United States military.....	264
Prisoners, United States.....	716
Projectiles, Navy.....	939
Public Buildings Commission.....	22
Public debt:	
Comparison of, 1912 and 1913.....	44
Transactions in.....	43
Public deposits in national banks.....	52
Public funds; change in manner of handling and disbursing.....	19
Public Health Service.....	20, 138
Domestic (Interstate) Quarantine, Division of.....	141
Foreign and Insular Quarantine and Immigration, Division of.....	140
Marine Hospitals and Relief, Division of.....	143
Recommendations.....	144
Sanitary Reports and Statistics, Division of.....	143
Scientific Research, Division of.....	138
Public lands (<i>see also</i> Alaska; General Land Office):	
Arid.....	1034
Arkansas, sunk lands and lake lands in.....	1134
Bounty-land warrants.....	1170
Carey Act.....	1139
Classification, report of.....	1104
Desert-land entries.....	1135
Disposition of, statistics relating to.....	1147
Division of, Department of Justice.....	701
Final proof.....	1145
Homestead entries in forest reserves.....	1138
Land entered and patented, area of.....	1128
Lieu selections for lands in Indian reservations.....	1137
Locators, professional.....	1146
Military reservations, abandoned.....	1137
New consolidated Carey Act suggested.....	1139
Oregon and California land-grant suits.....	702
Petroleum, phosphate, and potash.....	1031
Policy of the Interior Department.....	1021
Power sites.....	1039
Royalties for use of.....	1037
State selections.....	1136
Surveying.....	1130
Timber.....	1034
Public schools for Indians.....	1231
Public schools, rifle shooting in.....	227
Public-service corporations, facts concerning.....	1312
Public works, Marine Corps.....	1018
Publications:	
Department of Commerce.....	1340
Sale of.....	1346
Semiannual statement of ownership, circulation, etc.....	843
Publicity work in the Department of Commerce.....	1348
Pueblo Indians:	
Opposition to education.....	1240
Trust plan for.....	1239

Pure-food act (<i>see</i> Food and drugs act).....	Page.
Quarantine act, Federal plant.....	1288
Quarantine, Division of Domestic, Public Health Service.....	141
Quartermaster Corps, report of Chief of.....	290
Race:	
Influence of, Army.....	350
Influence of station on, Army.....	374
Radio communication.....	1435
Radio service, Navy.....	887
Radio stations, Navy.....	911
Radiotelegraphy:	
Army.....	522
As applied to aviation.....	529
Navy.....	929, 970
Radium and other rare metals, investigation of.....	1200
Railroad Commission, Alaska.....	1193
Railroads (<i>see also</i> Interstate Commerce Commission):	
Alaska.....	1027
Compensation to, for carrying the mails.....	747
Railway Adjustments, Division of, Post Office Department.....	797
Railway Mail Service. (<i>See</i> Post Office Department.).....	
Railway valuation.....	1536
Rates:	
Application of.....	1505
Transcontinental commodity westbound.....	1524
Ration for the Navy.....	980
Rebates and unlawful discriminations.....	681
Reclamation Service, abstract of report of.....	1071
Recoinage in 1913.....	72
Recruiting:	
Army.....	254, 274, 420
Marine Corps.....	1011
Navy.....	927
Redemption of national-bank notes.....	72
Register, Official.....	1378
Registered Mails, Division of.....	858
Reindeer service, the Alaska.....	1188
Religious leaders needed in the Navy.....	890
Remount service, Quartermaster Corps.....	328
Reservations:	
Abandoned military.....	1137
Bird.....	1109, 1144
Reservations and parks, national.....	1099
Reserve, Naval.....	888
Retail prices, study of.....	1311
Retired officers, Army.....	334
Retired pay, Navy.....	894
Retirement and superannuation.....	200, 1339, 1493
Revenue-Cutter Service.....	147
Alaska, service depot in.....	150
Cadets, appointment of.....	151
Consolidation with Coast Guard.....	20
Cutters.....	20
Derelicts, removal of.....	148
Fur seal, protection of the.....	149
Ice patrol.....	21, 149
Navigation, anchorage, and other laws, enforcement of.....	149
Saving of life and property on interior navigable waters.....	151
Revenue cutters.....	20
Revenue, frauds on.....	690
Revolutionary War Records.....	196
Rifles, automatic machine.....	497
River and harbor improvements.....	194, 453
Canals, rules and regulations governing the navigation of.....	462
Intracoastal waterways from Boston to the Rio Grande.....	458
Lake surveys, status of.....	471, 465
Lockport, Ill., to mouth of the Illinois River, waterway from.....	458

River and harbor improvements—Continued.		Page.
Mississippi River Commission.....		460
Niagara Falls, improvement of.....		472
Northern and northwestern lakes, survey of.....		462
Towboats for Mississippi River and its tributaries, experiments.....		461
Road building, Indian.....		1222
Road improvement, Federal aid in.....	872,	1283
Roads, post, improvement of.....		1284
Rock Island Arsenal.....		501
Royalties for use of public lands.....		1037
Rural carriers.....		867
Rural credits.....		1267
Address of President in regard to.....		7
Rural education.....		1182
Rural Mails, Division of (<i>see also</i> Post Office Department).....	756,	866
Rural organization problems.....		1272
Rural routes, establishment and readjustment of.....		869
Safety-appliance acts.....		690
Safety appliances, railway.....		1525
Safety at sea.....		1434
Safety at sea, address of President in regard to.....		11
Sale of Government publications.....		1346
San Antonio Arsenal.....		511
San Francisco, Letterman General Hospital in.....		394
Sanitary conditions and measures, Navy.....	990-999	
Sanitary reports and statistics, Public Health Service.....		143
Sanitary troops of the militia.....		417
Sanitation:		
Panama Canal.....		666
Philippines.....		387
Porto Rico.....	560,	589
Sanitation, Army.....		374
Sanitation and health, Navy.....		895
Sanitation and hygiene, school.....		1182
Saving deposits, Marine Corps.....		1011
Saving of life and property on interior navigable waters.....		151
Savings depositors and deposits in national banks.....		88
Savings deposits in all banks.....		110
School for the Blind, Maryland.....		1117
Schools:		
Army service.....		227
Indian.....	1229,	1231
Rifle shooting in.....		227
Scientific management, Ordnance Department.....		480
Sea, safety at.....		1434
Sea, safety at, address of President in regard to.....		11
Seacoast fortifications.....		173
Seacoast guns and carriages, improvements in installed.....		500
Sea post service, improvements in.....		813
Second Assistant Postmaster General, report of.....		795
Second-Class Mail Matter, Joint Committee on.....		801
Secretary of Agriculture, report of.....		1249
Secretary of Commerce, report of.....		1303
Secretary of the Interior, report of.....		1021
Secretary of Labor, report of.....		1441
Secretary of the Navy, report of.....		875
Secretary of the Treasury, report of.....		13
Secretary of War, report of.....		153
Seed distribution, Department of Agriculture.....		1292
Seminoles, the Florida.....		1239
Service schools, Army.....		227
Sherman antitrust law. (<i>See</i> Antitrust law.).....		
Shipbuilding work at navy yards.....		951
Shipping combinations.....		1437
Shipping commissioner.....		1433
Ships, historical.....		920
Shoes, Army.....		375, 416

	Page.
Shoe Machinery case.....	673
Signal Corps. (<i>See</i> Army.)	
Signaling, Army.....	277
Silver coinage of the Philippines.....	554
Silver certificates.....	61
Silver dollars, standard.....	67
Silver subsidiary coin.....	67
Small-arms firing.....	261
Smallpox:	
Army.....	372
Philippines.....	383
Smelter fumes.....	1199
Smokeless powder for Army.....	494
Smokeless powder, Navy.....	939
Soil-survey work, cooperation in.....	1256
Southern Pacific Railway Co., suits against, concerning oil lands.....	705
Specifications, standardization of, by the Navy.....	976
Springfield Armory.....	504
Stamped envelopes.....	855
Stamps. (<i>See</i> Post Office Department.)	
Stamps, Division of, Post Office Department.....	848
Stamps, internal-revenue.....	131
Standards, Bureau of (<i>see also</i> Commerce, Department of).....	1319
Standards, establishment of.....	1368
Stanley, Indian murderers of Superintendent.....	1233
Star service, Post Office Department.....	869
State agricultural institutions.....	1276
State boundaries.....	1132
State selections.....	1136
Statistics relating to the disposition of the public domain.....	1147
Steamboat-Inspection Service.....	1320
Change of name of.....	1430
First supervising inspection district, division of.....	1429
Hull inspection.....	1425
Inspection, certificates of.....	1430
Motor vessels.....	1426
Passenger steamers, precautions against overloading.....	1424
Reinspections.....	1426
Statistical summary of work of.....	1423
Supervising Inspector General's office.....	1430
Transportation of dangerous articles.....	1428
Traveling inspectors.....	1426
Stock raising, Indian.....	1219
Storm district, relief in.....	416, 919
Student officers, Navy.....	950
Submarine-mine defenses, Army.....	544
Sunk-land cases.....	705
Sunk lands and lake lands in Arkansas.....	1134
Superannuation and retirement.....	200, 1339, 1493
Supplies and Accounts, Navy, Bureau of.....	975
Supreme Court, United States:	
Abstracts of decisions at October, 1912, term.....	721
Antitrust cases decided by.....	671
Appeals from Court of Claims.....	697
Cases decided, important.....	693
Work of.....	691
Surgeon General:	
Army, report of.....	329
Navy, report of.....	983
Surgical operations, Army.....	352
Surveys and investigations, Bureau of Fisheries.....	1391
Surveys, Special, Coast and Geodetic Survey.....	1417
Swamp lands.....	1136
Target practice:	
Coast Artillery.....	545
Marine Corps.....	1013

	Page.
Tariffs, Division of Foreign.....	1349
Tax:	
Income.....	17
Special excise, on corporations.....	126
Telegraph operators, Army, additional pay.....	538
Telegraphs and telephones, postal.....	742
Territories, address of President in regard to.....	9
Territories of the United States.....	1089
Texas City and Galveston, sanitation of Army camps at.....	375
Third Assistant Postmaster General, report of.....	823
Tick eradication.....	1292
Tides and currents.....	1417
Timber lands.....	1034
Tobacco statistics, Census.....	1380
Topography, Division of, Post Office Department.....	871
Torpedo station, naval.....	946
Torpedoes, Navy.....	941
Traders' claims against Indians.....	1244
Training School for Boys, National.....	719
Training School for Girls, National.....	720
Trans-Atlantic mails.....	810
Transcontinental commodity rates.....	1524
Trans-Pacific mails.....	810
Transports:	
Army.....	279
Marine Corps.....	1017
Treasurer of the United States (<i>see also</i> Treasury Department):	
District of Columbia, transactions with.....	75
Funds, reserve and trust.....	45
Funds, special trust.....	74
General account of.....	55
Legislation recommended.....	75
Treasury, condition of.....	27
Treasury Department:	
Architect, Office of the Supervising.....	136
Available cash balance.....	47
Banks, State, savings, and private, and loan and trust companies.....	111
Bonded debt of the United States and national-bank holdings.....	92
Bonds—	
Deposits and withdrawals of, during the year.....	92
Held as security for national banks.....	49
Held as security for postal savings funds.....	50
Withdrawal of, to secure circulation.....	51
Bureaus and divisions, abstracts of reports of.....	133
Central heating and power plant.....	23
Changes in loans, bonds, cash, and deposits.....	86
Comptroller of the Currency, report of.....	77
Contingent fund.....	23
Crop-moving deposits.....	14
Currency. (<i>See</i> Paper currency.)	
Currency legislation.....	16
Currency, shipment of, from Washington.....	72
Customs service.....	18
Dayton, Ohio financial aid to.....	13
Debt of the United States and national-bank holdings, bonded.....	92
Deposits made in New York, transfer of funds for.....	69
Deposits of gold bullion at mints and assay offices in the fiscal years 1912 and 1913.....	71
Disbursements, comparison of.....	31
Emergency currency announcement.....	13
Engraving and Printing, Bureau of.....	135
Estimates.....	35
Finances.....	24
Fund, general, cash in the vaults.....	46
Funds for deposits made in New York, transfer of.....	69
Income tax.....	17

Treasury Department—Continued.

Internal revenue. (<i>See</i> Internal revenue.)	Page.
Internal Revenue, report of the Commissioner of	118
Life-Saving Service (<i>see also</i> Coast guard)	145
Loan and trust companies and State savings and private banks	111
Mint service	133
Monetary stock	55
Money in the United States, distribution of	108
National-bank notes, redemption of	72
National banks—	
Condition of	77
Designated as depositories of the United States	52
Loans and discounts of	80
Public deposits in	52
Savings depositors and deposits in	88
Notes—	
Treasury, of 1890	60
United States	59
Panama Canal	22, 42
Paper currency (<i>see also</i> Paper currency):	
Average life of	64
Condition of United States	58
Cost of	63
Outstanding, pieces of United States	62
Postal savings bonds and investments therein	51
Public debt, transactions in	43
Public Health Service (<i>see also</i> Public Health Service)	20, 138
Receipts and disbursements	24
Receipts, comparison of	29
Recoinage, 1913	72
Registered bonds, payment of interest on	45
Revenue-Cutter Service (<i>see also</i> Revenue-Cutter Service)	147
Savings deposits in all banks	110
Secretary, annual report of	13
Silver certificates	61
Silver coin, subsidiary	67
Silver dollars, standard	67
Solicitor of	715
Spurious issues of coins and currency detected	73
Treasury—	
Cash balance, available	47
Cash in the vaults	46
Coin, minor	68
Denominations, changes in	61
Gold bullion at mints and assay offices, deposits of	71
Gold certificates	60
Gold certificates for exchange on New York, use of order	70
Gold in the	48
Gold, ratio of to the total stock of money	56
Money in circulation	57
Statement of	46
United States notes	59
Treasurer of United States—	
General account of	55
Report of	41
Treasury notes of 1890	60
Treasury of the United States. (<i>See</i> Treasury Department.)	
Treasury, report of Secretary of	13
Troops:	
Field service of	232
Geographical distribution of	236
Geographical divisions and departments	236
Serving outside the continental limits of the United States	237
Trusts, efficiency of	1363
Tuberculosis:	
Army	369
Philippines	384

	Page.
Twenty-eight hour law.....	690
Typhoid fever:	
Army.....	360
Philippines.....	382
Utah and Ouray Reservation, leasing on the.....	1221
Uniform of the Army.....	275
Uniforms, Army, pride in.....	161
Union and Confederate Armies, official records of.....	267-268
United States notes.....	60
Universal Postal Congress.....	813
University, Howard.....	1114
Vancouver Barracks.....	447
Veneral diseases:	
Army.....	362
Philippines.....	383
Vessel fisheries, New England.....	1394
Vessels authorized, new, Navy.....	959
Vessels of the United States Navy, list of.....	956
Veterinary Corps, Army.....	409
Vital statistics, census.....	1380
Vocational training of Indians.....	1230
Volunteer commissions, persons qualified to hold.....	243
Wage earners, welfare of.....	1441
Walter Reed General Hospital.....	394
War:	
Cost of ordnance equipment of mobile army for.....	489
Use of air craft in.....	887
War Department:	
Adjutant General, report of.....	233
Adjutant General's Department.....	253
Alaska (<i>see also</i> Alaska).....	389
Army, the (<i>see also</i> Army).....	154
Army Medical Museum.....	419
Army service schools.....	227
Artificial limbs and apparatus.....	418
Badges, campaign.....	269
California Débris Commission.....	456
Chief of Engineers, report of.....	429
Chief of Staff, report of.....	203
China, troops serving in.....	390
Civil-service employees, retirement of.....	200
Civil War veterans' encampment at Gettysburg.....	231
Coast Artillery, report of Chief of (<i>see also</i> Army).....	540
Dental Corps.....	404
Dominican customs receivership.....	563
Field service of troops.....	232
Financial statements.....	198
Funds, public.....	278
Hawaii (<i>see also</i> Hawaii).....	389
Hospitals, construction and repair of.....	418
Hospital Corps.....	405
Inspector General:	
Report of.....	270
Requisition.....	278
Staff departments, business methods of.....	278
Inspector General's Department, personnel of the.....	270
Insular Affairs, report of Chief of Bureau of.....	547
Isthmian Canal Commission, report of.....	611
Judge Advocate General, report of.....	280
Legislation, Army.....	208
Maps.....	450
Medal, Philippine service.....	270
Medals of honor.....	269
Medical Corps.....	401
Flood relief work of.....	411

War Department—Continued.

	Page.
Medical Department.....	401
Artificial limbs and apparatus.....	418
Balkans, observations in the.....	415
Flood relief work, 1912.....	416
Pellagra, studies in.....	416
Plague in Porto Rico.....	414
Soldier's foot and shoe.....	416
Medical Reserve Corps.....	402
Medical School.....	410
Military Academy, the.....	170, 226, 253
Military education.....	228
Militia, the Organized.....	176
Mississippi River Commission.....	460
National cemeteries.....	295
Nurse Corps.....	404
Ordnance, Department of.....	175
Ordnance, report of Chief of.....	478
Panama Canal.....	186
Panama Canal Zone, troops in.....	391
Paper work.....	279
Personal identification system.....	267
Philippine Commission, report of the.....	565
Philippine Scouts (<i>see also</i> Philippines).....	236, 385
Philippines, the.....	178
Porto Rico.....	184
Troops in.....	391
Prison, United States military.....	264
Quartermaster Corps, construction and repair.....	310
Harbor-boat service.....	322
Personnel of the.....	290
Remount service.....	328
Report of chief of the.....	290
Quartermaster General, supplies.....	298
Recommendations of Chief of Staff.....	232
Reports submitted, enumeration of.....	202
Revolutionary War Records.....	196
Rifle shooting in the public schools.....	227
River and harbor improvements.....	194, 453
Secretary of, report of.....	153
Service schools, cooks and bakers trained at.....	279
Signal Corps. (<i>See</i> Army.).....	
Signal Office.....	520
Signal Officer, report of Chief.....	512
Supply departments of, consolidation of.....	174
Surgeon General—	
Report of the.....	329
Conclusion of report of.....	427
Union and Confederate Armies—	
Official records of the.....	267
Roster of officers and enlisted men of the.....	268
Veterinary corps, proposed.....	409
Washington-Alaska military cable and telegraph system, transfer of, to Post Office Department.....	176
Waterways Commission, International.....	196
Washington-Alaska military cable and telegraph system.....	176
Washington Barracks.....	446
Buildings, engineer post and school.....	451
Water power.....	1282
Watertown Arsenal.....	509
Watervliet Arsenal.....	508
Waterway from Lockport, Ill., to mouth of Illinois River.....	458
Waterways Commission, International.....	196
Weather Bureau:	
Hydrographic Office, cooperation with.....	1254
Reorganization of the.....	1253
Weights and measures of commerce and trade.....	1367

West Point. (<i>See</i> Military Academy, United States.)	Page.
White-slave-traffic act, violations of.....	714
Wind River Reservation, leasing on	1221
Window envelopes, Post Office Department.....	855
Wines for sacramental purposes, Indian.....	1224
Wireless stations, Army	522
Woman on the farm.....	1273
Yards and Docks, report of Chief of Bureau of.....	908
Yosemite National Park, Hetch Hetchy Valley.....	1104



[illegible]

PRINTED	IN U. S. A.
---------	-------------



J 80 U. S. President
A3
1913 Message from the pres-
v.2 ident of the United
 States to the two

J 80 U. S. President
A3
1913 Message from the president of
v.2 the United States to the two
 houses of congress

